PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : C12N 9/42, C11D 3/386

A1

(11) International Publication Number: **WO 99/01544**

(43) International Publication Date: 14 January 1999 (14.01.99)

(21) International Application Number: PCT/DK98/00299

(22) International Filing Date: 2 July 1998 (02.07.98)

(30) Priority Data:
0813/97 4 July 1997 (04.07.97) DK

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(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).

Published
With international search report.
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: FAMILY 6 ENDO–1,4–β–GLUCANASE VARIANTS AND CLEANING COMPOSIT IONS CONTAINING THEM

(57) Abstract

Cleaning compositions comprising one or more enzymes having cellulolytic activity wherein at least 25 % of the total weight of cellulolytic active protein derives from the presence of a *Humicola* endo–1,4–β–glucanase or *Humicola*–like cellulase of the glycolsyl hydrolase family 6, the *Humicola*–like cellulase being an enzyme comprising a catalytically core domain having an amino acid sequence being at least 35 % homologous to the appended SEQ ID NO:4; a method of constructing a variant of a parent *Humicola* family 6 (Cel6B) endo–beta–1,4–glucanase or a *Humicola*–like family 6 cellulase which variant has endo–beta–1,4–glucanase activity and improved detergent compatibility as compared to the parent endo–beta–1,4–glucanase or cellulase; and variants mutated eg. in positions 20, 56, 94, 95, 103, 182, 183 and 318 (Cel6B numbering).

FAMILY 6 ENDO-1,4-β-GLUCANASE VARIANTS AND CLEANING COMPOSITIONS CONTAINING THEM

The present invention relates to cleaning compositions, including laundry detergent compositions and fabric softener or fabric conditioning compositions, containing an endo-1,4-β-glucanase of the glycosyl hydrolase family 6, preferably an improved variant of a parent *Humicola* endoglucanase or *Humicola*-like cellulase; the improved variants; and a method of constructing the variants.

BACKGROUND OF THE INVENTION

Performance of a cleaning composition, for use in a washing or cleaning method, such as a laundry, dishwashing or surface cleaning method, is judged by a number of factors, including the ability to remove soils, the ability to prevent the redeposition of the soils, or, in case of laundry, the ability to maintain the original colours of the washed garment and the ability to maintain fabric or garment durability. The anti-harshening or softening effect of cellulase on fabrics and the fabric care (colour care/colour clarification) effect is known, e.g. from GB 1 368 599 and EP 269 168, along with other very beneficial cellulolytic effects such as particulate soil removal and de-pilling.

Fabric conditioning or fabric softener compositions, in particular compositions to be used in the rinse cycle of laundry washing processes, are also well known. Typically, such compositions contain a water-insoluble quaternary-ammonium fabric softening agent, the most commonly used having been di-long alkyl chain ammonium chloride. Fabric conditioning compositions comprising cellulase have also been suggested, e.g. in US 5,445,747, in particular compositions using a specific ~43kD cellulase obtained from the fungus *Humicola insolens*.

Cellulose is a polymer of glucose linked by β-1,4-glucosidic bonds. Cellulose chains form numerous intra- and intermolecular hydrogen bonds, which result in the formation of insoluble cellulose microfibrils. Microbial hydrolysis of cellulose to glucose involves the following three major classes of

cellulases: endo-1,4-β-glucanas s (EC 3.2.1.4), which cleave β-1,4-glucosidic links randomly throughout cellulose molecules; cellobiohydrolases (EC 3.2.1.91)(exoglucanases), which digest cellulose from the nonreducing end; and β-glucosidases (EC 3.2.1.21), which hydrolyse cellobiose and low-molecular-mass cellodextrins to release glucose. Most cellulases consist of a cellulose-binding domain (CBD) and a catalytic core or catalytic domain (CAD = catalytically active domain) separated by a linker rich in proline and hydroxy amino acid residues. All cellulases hydrolyse by either a "retaining" or "inverting" mechanism.

Cellulases are produced by many microorganisms and are often present in multiple forms. Recognition of the economic significance of the enzymatic degradation of cellulose has promoted an extensive search for industrially useful microbial cellulases. As a result, the enzymatic properties and the primary structures of a large number of cellulases have been investigated. On the basis of the results of a hydrophobic cluster analysis of the amino acid sequence of the catalytically active domain (CAD), these cellulases have been placed into 11 different families of glycosyl hydrolases (Henrissat, 1991; Henrissat et al., 1993). One of these families is known as the cellulase family B or as the glycosyl hydrolase family 6. Up till now, the following enzymes have been identified as belonging to this family: *Agaricus bisporus* exoglucanase 3 (cel3), *Cellulomonas fimi* endoglucanase A (cenA), *Cellulomonas fimi* exoglucanase A (cbhA), *Microspora bispora* endoglucanase A (celA), *Streptomyces halstedii* endoglucanase A (celA), *Streptomyces* strain KSM-9 endoglucanase 1 (casA), *Thermomonospora fusca* endoglucanase E-2 (celB), *Trichoderma reesei* exoglucanase II (cbh2), and probably *Neocallimastix patriciarum* exoglucanase (celA) (Denman et al., 1996) and *Orpinomyces sp.* (celA). The following two conserved regions have been used as signature patterns (PROSITE: PDOC00563. February 1997): V-x-Y-x(2)-P-x-R-D-C-[GSAF]-x(2)-[GSA](2)-x-G; and [LIVMYA]-[LIVA]-[LIVT]-[LIV]-E-P-D-[SAL]-[LI]-[PSAG]. The first conserved region contains a conserved aspartic acid residue which is potentially involved in the catalytic mechanism; the aspartate is followed by a cysteine which is involved in a di-

sulfide bond. The second conserved region contains an aspartate which seems to be the proton donor in the catalytic mechanism.

WO 97/20025 and WO 97/20026 discloses detergent compositions comprising an endoglucanase from *Thermomonospora fusca*.

An interesting feature of family 6 is that it contains both endoglucanases and exoglucanases which show definite differences in amino acid sequence, the exoglucanases having extra amino acid insertions. Without being bound to this theory it is presently believed that cellulolytic enzymes belonging to family 6 are inverting type enzymes, i.e. hydrolyse the β-1,4-glucosidic bond with inversion of anomeric configuration. The inverting mechanism involves protonation of the glycosidic oxygen of the scissile bond by an acidic amino acid residue (general acid catalyst) with concerted attack of a water molecule at the anomeric carbon. The nucleophilicity of this water molecule is greatly increased through deprotonation by a basic amino acid residue (general basic catalyst). The partial positive charge formed at the anomeric carbon in the transition state is stabilised through resonance with the ring oxygen. This gives the transition state significant oxocarbonium ion character which is stabilised by electrostatic interactions with the nearby carboxylate side chains and by specific binding interactions with the sugar in its half-chair conformation. In general, only glutamate and aspartate residues act directly as general acid or base catalysts in glycosidases (Damude et. al. 1996).

Detergent compositions with cellulases, either monocomponent endoglucanases or cellulase enzyme systems, i.e. a mixture of cellulases, have successfully been used commercially for some years. However, these compositions are neither recommendable for use in a presoaking bath nor for use in case of prolonged storage of the washed and rinsed wet laundry, e.g. in the washing machine prior to line or tumbler drying, since such prolonged enzymatic impact may result in a weakening of the fabric or garment presumably due to the actual (but unknown) mechanisms by which the cellulase types hitherto used in cleaning compositions have acted on the cellulose-containing or cellulosic fabric.

Thus, it is an obj ct of the present invention to provide cleaning compositions containing enzymes with cellulolytic ac-

tivity which enzymes provides colour clarification (colour care benefits) and possibly also soil removal of the laundry without any substantial weakening thereof when the laundry is subjected to pre-soaking or wet storage.

SUMMARY OF THE INVENTION

We have now found that endo-1,4-β-glucanases of the glycosyl hydrolase family 6 may valuably be incorporated into cleaning compositions at such a level that at least about 25% of the total weight of cellulolytic active enzyme protein present in the composition derives from the family 6 endoglucanase. The inclusion of such enzymes provides colour care benefits, i.e. colour clarification of laundry containing cotton or other cellulosic fabrics. It is known that such colour care benefit is also provided by endo-1,4-β-glucanases of the glycosyl hydrolase families 5, 7, 45, and 12. However, we now have surprisingly found that, in contrast to endoglucanases belonging to other families, application of family 6 endoglucanases in cleaning compositions delivers an important improvement in the degree of fabric durability, i.e. a considerable reduction in fabric weakening due to subjecting the laundry to a pre-soaking bath or prolonged wet storage of the washed or rinsed laundry within the washing machine.

Accordingly, in a first aspect the present invention relates to cleaning compositions comprising one or more enzymes having cellulolytic activity wherein at least 25% of the total weight of cellulolytic active enzyme protein derives from the presence of a *Humicola* endo-1,4-β-glucanase or *Humicola*-like cellulase (endo-type (Cel6B) or exo-type (Cel6A))of the glycosyl hydrolase family 6, the *Humicola*-like cellulase being an enzyme comprising a catalytically core domain having an amino acid sequence being at least 35% homologous to the appended SEQ ID NO:4.

By using the present invention, it is now possible to use high performance cleaning compositions in any cleaning or laundering method without a substantial, negative impact on fabric durability.

In second and third aspects, the invention provides a method of constructing a variant of a parent *Humicola* family 6 endo-beta-1,4-glucanase or a *Humicola*-like family 6 cellulase which variant has endo-beta-1,4-glucanase activity and improved detergent compability as compared to the parent endo-beta-1,4-glucanase or cellulase; and variants provided by the method.

By using the protein engineering method of the invention it is now possible to provide well-performing endoglucanases from enzymatic starting material originally having different activities and/or different properties, eg can a cellobiohydrolase enzyme with poor detergent compability be engineered into a well-performing endoglucanase enzyme based on the findings disclosed herein.

THE DRAWINGS

In the accompanying drawings,

Fig. 1 shows ClustalW multiple sequence alignment of Family 6 cellulases. The !SS_HI_CEL6B row shows the definition of α-helical (H) and β-strand (S) regions.

Fig. 2 shows the nucleotide sequence of pCA6H from BamHI-XbaI; the translational initiation codon is underlined (see example 3).

Fig. 3 shows the nucleotide sequence of pC6H from BamHI-XbaI, the translational initiation codon is underlined (see example 3).

Figure 4: Secondary structure elements (strand and helix only) of catalytic core domain of *Humicola insolens* Cel6B as determined by DSSP for the two independent molecules in the asymmetric unit. (H) α-helix, (3) 3-10-helix, (S) β-strand.

Figure 5: The loop regions encompassing the binding cleft in the catalytic core region of *Humicola insolens* Cel6B. (L) indicate the defined loop regions encompassing the binding cleft, (H) α-helical structure in both molecules, (S) β-strand regions in both molecules.

Fig. 6 shows the loop regions encompassing the binding cleft in *Humicola insolens* Cel6A as determined from sequence alignment to *Humicola insolens* EGIV (Cel6B). The numbering refers to the mature full length protein.

Fig. 7 shows the loop regions encompassing the binding cleft in *Humicola insolens* Cel6A as determined from analysis of X-ray structure.

Fig. 8: Residues on the surface of *Humicola insolens* Cel6B catalytic core domain and *Neocallimastix patriciarum* catalytic core domain (Q12646) are shown in bold and underline (see example 6).

Figure 9: Residues on the surface of *Humicola insolens* Cel6B catalytic core domain and *Orpinomyces sp.* CelA catalytic core domain (P78720) are shown in bold and underline (see example 6).

Figure 10: Residues on the surface of *Humicola insolens* Cel6B catalytic core domain and *Orpinomyces sp.* CelC catalytic core domain (P78721) are shown in bold and underline (see example 6).

In addition to the drawings, the present specification contains two appendices:

Appendix 1 shows the structural coordinates of *Humicola insolens* EG VI (Cel6B) endo-beta-1,4-glucanase.

Appendix 2 shows the structural coordinates of *Humicola insolens* Cel6A cellulase.

DETAILED DESCRIPTION OF THE INVENTION

Cellulase Numbering

In the context of this invention a specific numbering of amino acid residue positions in cellulolytic enzymes is employed. By aligning the amino acid sequences of known cellulases, as in figure 1 below, it is possible to unambiguously allot an amino acid position number to any amino acid residue in any cellulolytic enzyme, if its amino acid sequence is known.

In figure 1 a number of selected amino acid sequences of cellulases of different microbial origin are aligned.

Using the numbering system originating from the amino acid sequence of the cellulase (endo-β-1,4-glucanase EG VI) obtained from the strain of *Humicola insolens,* DSM 1800, disclosed in e.g. Fig.1, aligned with the amino acid sequence of a number of

other cellulases, it is possible to indicate the position of an amino acid residue in a cellulolytic enzyme unambiguously.

In describing the various cellulase variants produced or contemplated according to the invention, the following nomenclatures are adapted for ease of reference:

[Original amino acid; Position; Substituted amino acid]

Accordingly, the substitution of glutamine with histidine in position 119 is designated as Q119H.

Amino acid residues which represent insertions in relation to the amino acid sequence of the cellulase from *Humicola insolens*, are numbered by the addition of letters in alphabetical order to the preceding cellulase number, such as e.g. position *21aV for the "inserted" valine (V), where no amino acid residue is present, between lysine at position 21 and alanine at position 22 of the amino acid sequence of the cellulase from *Humicola insolens*, cf. Table 1.

Deletion of a proline (P) at position 49 in the amino acid sequence of the cellulase from *Humicola insolens* is indicated as P49*.

Multiple mutations are separated by slash marks ("/"), e.g. Q119H/Q146R, representing mutations in positions 119 and 146 substituting glutamine (Q) with histidine (H), and glutamine (Q) acid with arginine (R), respectively.

If a substitution is made by mutation in e.g. a cellulase derived from a strain of *Humicola insolens*, the product is designated e.g. "*Humicola insolens*/*49P".

All positions referred to in this application by cellulase numbering refer, unless otherwise stated, to the cellulase numbers described above, and are determined relative to the amino acid sequence of the cellulase derived from *Humicola insolens* Cel6B.

Definitions

In the specification and claims, the term "endoglucanase" is intended to denote enzymes with cellulolytic activity, especially endo-1,4-β-glucanase activity, which are classified in EC 3.2.1.4 according to the Enzyme Nomenclature (1992) and are capable of catalysing (endo)hydrolysis of 1,4-β-D-glucosidic link-

ages in cellulose, lichenin and cereal β-D-glucans including 1,4-linkages in β-D-glucans also containing 1,3-linkages.

In the present context, the term "inverting type endoglucanase" means an endo-β-1,4-glucanase which hydrolyses the glycosidic bond with net inversion of anomeric configuration, i.e. which operate via a direct displacement of the leaving group by water: one residue acts as a general acid and the other as a general base.

In the present context, the term "retaining type endoglucanase" means an endo-β-1,4-glucanase" which hydrolyses the glycosidic bond with net retention of anomeric configuration, i.e. which utilizes a double-displacement mechanism involving a glycosyl-enzyme intermediate: one residue functions as general acid and general base while the other acts as a nucleophile and leaving group (McCarter et al., 1994).

The enzyme

In a preferred embodiment of the present invention, the cleaning composition comprises a *Humicola* endo-1,4-β-glucanase or *Humicola*-like cellulase of the glycosyl hydrolase family 6 in an amount corresponding to at least 25%, preferably at least 30%, more preferably at least 40%, even more preferably at least 90%, especially at least 98%, of the total weight of enzyme protein having cellulolytic activity.

In the present context, the term "*Humicola*-like cellulase" denotes an endoglucanase or an exoglucanase (cellobiohydrolase) comprising a catalytically core domain which has an amino acid sequence being at least 35% homologous to SEQ ID NO:4. This is explained in further detail below.

It is believed that no naturally occurring microorganism is capable of producing a cellulase complex comprising a family 6 endoglucanase in an amount of at least 25% by weight of the total amount of enzyme protein having cellulolytic activity. Accordingly, family 6 endoglucanase will usually be present in a mixture of other enzymes having cellulolytic activity. This mixture may either be a conventional fermentation product, possibly isolated and purified, from a single species of a microorganism.

Besides family 6 endoglucanase, examples of other cellulolytic enzymes usually present in a fungal cellulolytic mixture, i.e. a cellulase complex produced by a fungal species, are endo-1,4-β-glucanases of the glycosyl hydrolase families 5, 7, 12, or 45; and examples of other cellulolytic enzymes usually present in a bacterial cellulolytic mixture, i.e. a cellulase complex produced by a bacterial species, are endo-1,4-β-glucanases of the glycosyl hydrolase families 5, 8, 9, 12, 41, 45 or 48. The mixture may also be a mixture of monocomponent enzymes, preferably enzymes derived from bacterial or fungal species by using conventional recombinant techniques, which enzymes have been fermented and possibly isolated and purified separately and which may originate from different species, preferably fungal or bacterial species. The mixture may also be the fermentation product of a microorganism which acts as a host cell for expression of a recombinant endoglucanase, e.g. a family 6 endoglucanase, but which microorganism simultaneously produces other cellulases being naturally occurring fermentation products of the microorganism, i.e. the cellulase complex conventionally produced by the corresponding naturally occurring microorganism. Examples of useful recombinantly producible endo-1,4-β-glucanases of the glycosyl hydrolase family 45 are disclosed e.g. in WO91/17243, WO94/07998, and WO96/29397 which are hereby incorporated by reference. Examples of other useful endo-1,4-β-glucanases of the glycosyl hydrolase families 5, 7, 8, 9, 12, 41 and 48 are disclosed e.g. in Henrissat, 1991, and in Henrissat et al, 1993, which are hereby incorporated by reference.

In another preferred embodiment, essentially all cellulolytic activity present in the composition of the invention results from one single enzyme component, i.e. a monocomponent endo-1,4-β-glucanase of the glycosyl hydrolase family 6. Examples of endo-1,4-β-glucanases of the glycosyl hydrolase family 6 are those derived from the species *Humicola insolens* (eg EG VI also denoted Cel6B), *Neocallimastix patriciarum, Orpinomyces sp.* Further, it is comtemplated that the species *Trichoderma reesei* and *Fusarium oxysporum* produces enzymes which are suitable as starting material for the protein engineering method by which

well-performing family 6 endoglucanase variants can be constructed.

In general, the family 6 endo-1,4-β-glucanase may be present in the cleaning composition of the present invention in an amount corresponding to from about 1 ECU to about 100000 ECU per liter washing or rinsing solution.

Preferably, the family 6 endo-1,4-β-glucanase, either native or variant, comprises one or two cellulose-binding domains (CBD) operably linked to the catalytic domain.

A cellulose binding domain (CBD) is a polypeptide which has high affinity for or binds to water-insoluble forms of cellulose and chitin, including crystalline forms.

CBDs are found as integral parts of large protein complexes consisting of two or more different polypeptides, for example in hydrolytic enzymes (hydrolases) which typically are composed of a catalytic domain containing the active site for substrate hydrolysis, and a carbohydrate-binding domain or cellulose-binding domain (CBD) for binding to the insoluble matrix. Such enzymes can comprise more than one catalytic domain and one, two or three CBDs and optionally one or more polypeptide regions linking the CBD(s) with the catalytic domain(s), the latter regions usually being denoted a "linker". Examples of hydrolytic enzymes comprising a CBD are cellulases, xylanases, mannanases, arabinofuranosidases, acetyl esterases and chitinases. CBDs have also been found in algae, e.g. the red alga *Porphyra purpurea* as a non-hydrolytic polysaccharide-binding protein, see Peter Tomme et al. "Cellulose-Binding Domains: Classification and Properties" in "Enzymatic Degradation of Insoluble Carbohydrates", John N. Saddler and Michael H. Penner (Eds.), ACS Symposium Series, No. 618, 1996. However, most of the known CBDs are from cellulases and xylanases.

In this context, the term "cellulose-binding domain" is intended to be understood as defined by Tomme et al., *op. cit.* This definition classifies more than 120 cellulose-binding domains into 10 families (I-X) which may have different functions or roles in connection with the mechanism of substrate binding. However, it is anticipated that new family

representatives and additional CBD famili s will appear in the future.

In the protein complex, typically a hydrolytic enzyme, a CBD is located at the N or C termini or is internal.

A monomeric CBD typically consists of more than about 30 and less than about 250 amino acid residues. For example, a CBD classified in Family I consists of 33-37 amino acid residues; a CBD classified in Family IIa consists of 95-108 amino acid residues; and a CBD classified in Family VI consists of 85-92 amino acid residues. Accordingly, the molecular weight of a monomeric CBD will typically be in the range of from about 4kD to about 40kD, and usually below about 35kD.

CBDs may be useful as a single domain polypeptide or as a dimer, a trimer, or a polymer; or as a part of a protein hybrid.

Chimeric protein hybrids are known in the art, see e.g. WO 90/00609, WO 94/24158 and WO 95/16782, and comprise a cellulose binding domain (CBD) from another origin, preferably from another microbial origin, than the chimeric protein as such, which CBD exists as an integral part of the protein. Typically, the chimeric protein hybrids are enzyme hybrids, i.e. contain a catalytic domain together with the binding domain.

Chimaric protein hybrids and enzyme hybrids can be prepared by transforming into a host cell a DNA construct comprising at least a fragment of DNA encoding the cellulose-binding domain (CBD) ligated, with or without a linker, to a DNA sequence encoding the protein or enzyme and growing the host cell to express the fused gene. The recombinant fusion protein or enzyme hybrids may be described by the following formula:

CBD - MR - X

wherein CBD is the N-terminal or the C-terminal region of an amino acid sequence corresponding to at least the cellulose-binding domain; MR is the middle region (the linker), and may be a bond, or a short linking group preferably of from about 2 to about 100 carbon atoms, more preferably of from 2 to 40 carbon atoms; or is preferably from about 2 to to about 100 amino acids, more preferably of from 2 to 40 amino acids; and X is an

N-terminal or C-terminal region of a polypeptide encoded by the DNA sequence encoding the protein or enzyme.

However, recombinant fusion protein or enzyme hybrids having an internal CBD are also contemplated.

The method of constructing enzyme variants and the variants

In a preferred embodiment, the invention provides a method of constructing a variant of a parent *Humicola* family 6 endo-beta-1,4-glucanase, which variant has endo-beta-1,4-glucanase activity and improved detergent compability as compared to the parent endo-beta-1,4-glucanase, which method comprises i) analysing the structure of the parent *Humicola* family 6 endo-beta-1,4-glucanase to identify at least one amino acid residue or at least one structural part of the *Humicola* family 6 endo-beta-1,4-glucanase catalytically core domain structure, which amino acid residue or structural part is believed to be of relevance for altering the detergent compatibility of the parent *Humicola* family 6 endo-beta-1,4-glucanase as evaluated on the basis of structural or functional considerations, ii) constructing a *Humicola* family 6 endo-beta-1,4-glucanase variant, which as compared to the parent *Humicola* family 6 endo-beta-1,4-glucanase has been modified in the amino acid residue or structural part identified in i) so as to alter the detergent compatibility, and, optionally, iii) testing the resulting *Humicola* family 6 endo-beta-1,4-glucanase variant with respect to detergent compatibility.

Preferably, the structural part to be modified is the binding cleft, the loop region encompassing the binding cleft, or the side chain of the catalytic acid Asp139.

In another preferred embodiment, the invention provides a method of constructing a variant of a parent *Humicola*-like family 6 cellulase, which variant has endo-beta-1,4-glucanase activity and improved detergent compatibility as compared to the parent cellulase, which method comprises i) comparing the three-dimensional structure of the *Humicola* endo-beta-1,4-glucanase with the structure of a *Humicola*-like cellulase, ii) identifying a part of the *Humicola*-like cellulase structure which is different from the *Humicola* endo-beta-1,4-glucanase structure and which from structural or functional considerations is contemplated to be responsible for differences in the detergent compatibility of the

Humicola endo-b ta-1,4-glucanase and *Humicola*-like cellulase, iii) modifying the part of the *Humicola*-like cellulase identified in ii) whereby a *Humicola*-like endo-beta-1,4-glucanase variant is obtained, which has an improved detergent compatibility compared to the parent *Humicola*-like cellulase, and optionally, iv) testing the resulting *Humicola*-like endo-beta-1,4-glucanase variant with respect to detergent compatibility.

Preferably, the part of the *Humicola*-like cellulase is modified so as to resemble the corresponding part of the *Humicola* family 6 endo-beta-1,4-glucanase.

The modification is, in step iii) of the method, accomplished by deleting one or more amino acid residues of the part of the *Humicola*-like cellulase to be modified; or the modification is accomplished by replacing one or more amino acid residues of the part of the *Humicola*-like cellulase to be modified with the amino acid residues occupying corresponding positions in the *Humicola* endo-beta-1,4-glucanase; or the modification is accomplished by insertion of one or more amino acid residues present in the *Humicola* endo-beta-1,4-glucanase into a corresponding position in the *Humicola*-like cellulase.

In a preferred embodiment, the parent *Humicola* endo-beta-1,4-glucanase is derived from a strain of *Humicola insolens*, more preferably from the strain *Humicola insolens*, DSM 1800.

By the term "improved detergent compability" as used herein is meant improved properties of the enzyme with respect to enzymatic activity and stability in commercial detergent compositions. More specifically, these improved properties are improved enzymatic performance or enzymatic activity at a high pH, preferably at a pH above 8, more preferably above 9, especially at a pH about or above 10; improved stability towards conventional commercial detergent composition ingredients such as anionic or non-ionic surfactants, cf. examples 4-7; improved thermal stability; and improved resistance to oxidation (ie improved compatibility towards conventional detergent composition ingredients such as bleaching agents).

<u>The three-dimensional structure of *Humicola insolens* Cel6B (EG VI) catalytic core domain</u>

The three-dimensional structure of the catalytic core domain of the *Humicola insolens* Cel6B fungal cellulase was solved by X-ray crystallographic methods. The extent of the catalytic core domain used for the experiment was the 347 amino acid residues starting from position 27 of SEQ ID NO:4 (and including position 373 of SEQ ID NO:4).

The obtained three-dimensional structure is believed to be representative for the structure of the any fungal endoglucanase catalytic core domain belonging to family 6 of glycosyl hydrolases (Henrissat B. "A classification of glycosyl hydrolases based on amino-acid sequence similarities." Biochem. J. 280 309-316 (1991). Henrissat B., Bairoch A. "New families in the classification of glycosyl hydrolases based on amino-acid sequence similarities. Biochem. J. 293 781-788 (1993). Henrissat B., Bairoch A. "Updating the sequence-based classification of glycosyl hydrolases." Biochem. J. 316 695-696 (1996).Davies G., Henrissat B. "Structures and mechanisms of glycosyl hydrolases." Structure 3 853-859 (1995)).

The structure was solved in accordance with the principles for X-ray crystallographic methods given in "X-Ray Structure Determination", Stout, G.K. and Jensen, L.H., John Wiley and Sons, Inc. N.Y. 1989. The structural coordinates of the catalytic core domain of the *Humicola insolens* Cel6B fungal cellulase solved at 1.6Å resolution are given in Appendix 1 in a conventional Brookhaven Protein Data Bank (PDB) format (E. E. Abola, F. C. Bernstein, S. H. Bryant, T. F. Koetzle, and J. Weng, Protein Data Bank, in Crystallographic Databases-Information Content, Software Systems, Scientific Applications, F. H. Allen, G. Bergerhoff, and R. Sievers, eds., Data Commission of the International Union of Crystallography, Bonn/Cambridge/Chester (1987) pp. 107-132. ; F. C. Bernstein, T. F. Koetzle, G. J. B. Williams, E. F. Meyer, Jr., M. D. Brice, J. R. Rodgers, O. Kennard, T. Shimanouchi, and M. Tasumi, The Protein Data Bank: a Computer-based Archival File for Macromolecular Structures, J. Mol. Biol. 112, 535-542 (1977); http://www.pdb.bnl.gov/).

The structure contains two independent molecules in the asymmetric unit identified by the letters A and B respectively. Only the part from residue G3 to A347 are detectable in the X-ray structure. It is thought that the remaining residues are

disordered under these crystallization and data collection conditions and therefore not detectable in the X-ray structure. It is to be understood that Appendix 1 forms part of the present application.

The structure of the catalytic core domain of the *Humicola insolens* Cel6B fungal cellulase exhibits the distorted barrel topology first described for a family 6 glycoside hydrolase by the *Trichoderma reesei* CBHII structure (J.Rouvinen *et.al.* "Three-dimensional structure of cellobiohydrolase from Trichoderma reesei" *Science* **249**, p380-386 (1990)). The catalytic Brønsted acid (D139) and the catalytic base (D316) are located on each side of a cleft at a distance of 9.12Å and 9.64Å for the two independent molecules respectively consistent with the catalytic mechanism occurring with inversion of the anomeric configuration. A third acidic residue (D180) is located close to the Brønsted acid having the effect of stabilizing the protonated form of the D139 thereby making the enzyme active even at alkaline conditions.

The secondary structure of the core domain of the *Humicola insolens* Cel6B fungal cellulase as determined by the DSSP program (W.Kabsch & C.Sander, *Dictionary of protein secondary structure: pattern recognition of hydrogen bond and geometrical features*. Biopolymers **22**, 2577-2637 (1983)) is shown in figure 4.

The three-dimensional structure of the catalytic core domain of the *Humicola insolens* Cel6A cellulase was solved by X-ray crystallographic methods as described above and is shown in Appendix 2.

<u>Definition of the binding cleft of a three-dimensional structure of an enzyme belonging to Family 6 of glycosyl hydrolases:</u>

A binding cleft is defined as consisting of the largest cave (pocket) on the surface of an enzyme and can extend beyond this pocket.

Using WHAT IF (G.Vriend, *WHAT IF: a molecular modelling and drug design program*. J.Mol.Graph. **8**, 52-56, (1990) version 19980317-1938) applying the AACAVI command of the MAP menu with a *PROBE RADIUS* of 1.4 Å the residues on the surface of the largest cave (pocket) can be detected.

The binding cleft in contact with the substrate can consist of more residues than those in the concave cleft detected above. Those can be detected by visual inspection of the three-dimensional structure e.g. using the program *InsightII* (© 1996, Molecular Simulations Incorporated) finding surface exposed residues extending from the concave cleft defined above. Surface exposure are detected either by the DSSP program (se below) or by the *Surface Molecule* command of InsightII.

Definition of the binding cleft of the catalytic core domain of *Humicola insolens* Cel6B.

Applying the method to the three-dimensional structure of the catalytic core domain of *Humicola insolens* Cel6B the concave part of the binding cleft as detected by WHAT IF is defined as comprising of the following residues: W52, S54, Y86, D92, P138, D139, D180, A182, N183, W186, N219, V220, S221, N222, W282, K310, P311, E314, S315, D316, A327 and G328.

By visual inspection using *InsightII* the complete binding cleft is defined as comprising of the following residues: N14, D16, K20, Y51, W52, S54, L58, Y86, R91, D92, P138, D139, D180, A182, N183, G185, W186, W189, N219, V220, S221, N222, W279, W282, K310, P311, E314, D316, A327 and G328.

The loop regions encompassing the binding cleft:

Given the binding cleft as described above, the loop regions encompassing the binding cleft is defined as the regions of contiguous sequence not belonging to a α-helical region or a β-strand region in any of the determined structures. In this definition the 3-10 helices are included in the loop definition as they are not seen as an integral part of the inner core structure. Using this definition together with the secondary structure information in figure 4 the binding cleft encompassing loops are defined as: L12, V13, N14, S54, N55, I56, F57, L58, L59, Y86, N87, L88, P89, D90, R91, D92, C93, S94, A95, G96, E97, S98, S99, G100, E101, L102, K103, L104, S105, Q106, N107, E137, P138, D139, V181, A182, N183, G188, W189, A190, D191, K192, N219, V220, S221, N222, Y223, N224, P225, Y226, S227, T228, S229, N230, P231, P232, P233, Y234, T235, S236, G237, S238, P239,

S240, P241, D242, A271, L272, S273, G274, A275, R276, S277, E278, W279, G280, Q281, W282, C283, N284, V285, N286, P287, W308, V309, K310, P311, G312, G313, E314, S315, D316, G317, Q318, C319, G320, M321, G322, G323, A324, P325, A326, A327, G328, M329, W330, F331.

This can be seen graphically in figure 5.

Residues in proximity:

To detect residues in proximity of each other the *Subset zone* command of the InsightII program is applied. The command detects residues or individual atoms within a defined distance from a predefined subset, groups of residues or groups of atoms. The *Subset list* command can be used to investigate the result.

Residues within 5 Å of residues in the binding cleft:

Based on the above definition of the binding cleft the following residues are within 5 Å of the residues in the binding cleft (including the residues in the binding cleft): L12, V13, N14, S15, D16, Y17, S18, S19, K20, L21, D22, Q23, T24, V47, G48, T49, F50, Y51, W52, I53, S54, N55, I56, F57, L58, L59, R60, D61, I62, V64, A65, N68, V81, G82, L83, V84, L85, Y86, N87, L88, P89, D90, R91, D92, C93, S94, A95, G96, E97, S98, S99, G100, L102, Y116, I135, L136, E137, P138, D139, A140, I141, G142, N143, T146, Q159, Y178, L179, D180, V181, A182, N183, G184, G185, W186, L187, G188, W189, A190, D191, K192, L193, S217, S218, N219, V220, S221, N222, Y223, N224, Y234, T235, S236, G237, S238, P239, S240, P241, E243, Y246, I265, D266, Q267, S268, R269, R276, S277, E278, W279, G280, Q281, W282, C283, N284, V285, W308, V309, K310, P311, G312, G313, E314, S315, D316, G317, Q318, C319, A324, P325, A326, A327, G328, M329, W330, F331, D332.

Residues within 2.5 Å of residues in the binding cleft:

Based on the above definition of the binding cleft the following residues are within 2.5 Å of the residues in the binding cleft (including the residues in the binding cleft): V13, N14, S15, D16, Y17, S19, K20, L21, F50, Y51, W52, I53, S54, N55, F57, L58, L59, L85, Y86, N87, D90, R91, D92, C93, E137, P138, D139, A140, L179, D180, V181, A182, N183, G184, G185, W186,

L187, G188, W189, A190, S218, N219, V220, S221, N222, Y223, E278, W279, G280, Q281, W282, C283, V309, K310, P311, G312, G313, E314, S315, D316, A326, A327, G328, M329.

Residues within 15.0 Å of D139 side chain in the three-dimensional structure of *Humicola insolens* Cel6B catalytic core domain:

The following residues are found to be within 15.0 Å of an atom in the side chain of the catalytic acid (D139) defined as any of the atoms CB, CG, OD1 or OD2 in one of the two independent structures in the three-dimensional structure of *Humicola insolens* Cel6B catalytic core domain: F50, W52, I53, S54, L83, V84, L85, Y86, N87, L88, P89, D90, R91, D92, C93, S94, A95, G96, E97, S98, S99, G100, E101, L102, Y112, Y116, V134, I135, L136, E137, P138, D139, A140, I141, G142, N143, M144, V145, T146, G147, T148, S149, F151, C152, R153, A155, R156, P158, Q159, Q160, A162, I163, Y178, L179, D180, V181, A182, N183, G184, G185, W186, L187, G188, W189, K192, L193, P195, T196, A197, E199, V200, I203, G215, F216, S217, S218, N219, V220, S221, N222, Y223, N224, P225, Y234, S240, D242, E243, Y246, A247, I250, M254, Q262, F263, I264, I265, D266, Q267, S268, R269, R276, E278, W279, G280, Q281, W282, C283, N284, V285, V307, W308, V309, K310, P311, G312, E314, S315, D316, G317, Q318, C319, A327, G328, Y334.

Residues within 10.0 Å of D139 side chain in the three-dimensional structure of *Humicola insolens* Cel6B catalytic core domain:

The following residues are found to be within 10.0 Å of an atom in the side chain of the catalytic acid (D139) defined as any of the atoms CB, CG, OD1 or OD2 in one of the two independent structures in the three-dimensional structure of *Humicola insolens* Cel6B catalytic core domain: W52, V84, L85, Y86, L88, D90, R91, D92, C93, S94, A95, S99, I135, L136, E137, P138, D139, A140, I141, G142, N143, M144, V145, T146, C152, Q159, I163, L179, D180, V181, A182, N183, G184, G185, W186, L187, S217, S218, N219, V220, S221, N222, Y223, N224, E243, Y246, D266, R269, G280, Q281, W282, C283, K310, D316.

Residues within 5.0 Å of D139 side chain in the three-dimensional structure of *Humicola insolens* Cel6B catalytic core domain:

The following residues are found to be within 5.0 Å of an atom in the side chain of the catalytic acid (D139) defined as any of the atoms CB, CG, OD1 or OD2 in one of the two independent structures in the three-dimensional structure of *Humicola insolens* Cel6B catalytic core domain: D92, P138, D139, A140, N143, D180, A182, W186.

Residues on the surface of the molecule:

Residues on the surface of the three-dimensional structure of a molecule is defined as those having any part of their surface exposed to the solvent as calculated by the DSSP program (W.Kabsch & C.Sander, *Dictionary of protein secondary structure: pattern recognition of hydrogen bond and geometrical features*. Biopolymers **22**, 2577-2637 (1983)).

For three-dimensional structure of the catalytic core domain of the *Humicola insolens* Cel6B fungal cellulase the application of the DSSP program to both of the molecules reveiled that the following residues were defined as being on the surface of the molecule:

G3, N4, P5, S7, G8, R9, T10, L11, L12, V13, N14, S15, D16, Y17, S18, S19, K20, D22, Q23, R25, Q26, A27, L29, S30, R31, G32, D33, Q34, T35, N36, A37, A38, K39, K41, Y42, V43, Q44, E45, K46, V47, G48, T49, Y51, W52, S54, N55, I56, F57, L58, L59, R60, D61, D63, V64, I66, Q67, N68, A69, R70, A71, A72, K73, A74, R75, G76, E77, N78, P79, Y86, L88, D90, R91, D92, C93, S94, A95, G96, E97, S98, S99, G100, E101, L102, K103, L104, S105, Q106, N107, G108, L109, N110, R111, Y112, K113, N114, E115, V117, N118, P119, F120, A121, Q122, K123, K125, A126, A127, S128, D129, V130, Q131, L136, E137, P138, D139, A140, I141, N143, M144, V145, T146, G147, T148, S149, A150, F151, C152, R153, N154, R156, G157, P158, Q159, Q160, E161, I163, G164, Y165, A166, S168, Q169, L170, Q171, A172, S173, H174, I175, H176, L177, L179, D180, A182, N183, G185, W186, W189, A190, D191, K192, L193, E194, P195, Q198, E199, A201, T202, L204, Q205, K206, A207, G208, N209, N210, A211, K212, I213, R214, S217, N219, V220, S221,

N222, N224, P225, Y226, S227, T228, S229, N230, P231, P232, P233, Y234, T235, S236, G237, S238, P239, P241, D242, S244, R245, T248, N249, N252, A253, R255, Q256, R257, G258, L259, P260, T261, Q262, I264, D266, Q267, S268, V270, A271, L272, S273, G274, A275, R276, S277, E278, W279, G280, Q281, W282, C283, V285, N286, P287, G289, F290, G291, Q292, P293, F294, T295, T296, N297, T298, N299, N300, P301, N302, V303, D304, I306, V309, K310, P311, E314, D316, G317, Q318, C319, G320, M321, G322, G323, A324, P325, A326, A327, G328, M329, W330, F331, D332, A333, Y334, Q336, M337, Q340, N341, A342, H343, D344, E345, I346.

Residues within 15.0 Å of D139 side chain in the three-dimensional structure of *Humicola insolens* Cel6B catalytic core domain and defined as being on the surface:

The following residues are found to be within 15.0 Å of an atom in the side chain of the catalytic acid (D139) defined as any of the atoms CB, CG, OD1 or OD2 in one of the two independent structures in the three-dimensional structure of *Humicola insolens* Cel6B catalytic core domain and are defined as being on the surface of the molecule: W52, S54, Y86, L88, D90, R91, D92, C93, S94, A95, G96, E97, S98, S99, G100, E101, L102, Y112, L136, E137, P138, D139, A140, I141, N143, M144, V145, T146, G147, T148, S149, F151, C152, R153, A155, R156, P158, Q159, Q160, I163, L179, D180, A182, N183, G185, W186, W189, K192, L193, P195, E199, S217, N219, V220, S221, N222, N224, P225, Y234, D242, Q262, I264, D266, Q267, S268, R276, E278, W279, G280, Q281, W282, C283, V285, V309, K310, P311, E314, D316, G317, Q318, C319, A327, G328, Y334.

Residues within 10.0 Å of D139 side chain in the three-dimensional structure of *Humicola insolens* Cel6B catalytic core domain and defined as being on the surface:

The following residues are found to be within 10.0 Å of an atom in the side chain of the catalytic acid (D139) defined as any of the atoms CB, CG, OD1 or OD2 in one of the two independent structures in the three-dimensional structure of *Humicola insolens* Cel6B catalytic core domain and are defined as being on the surface of the molecule: W52, Y86, L88, D90, R91, D92, C93,

S94, A95, S99, L136, E137, P138, D139, A140, I141, N143, M144, V145, T146, C152, Q159, I163, L179, D180, A182, N183, G185, W186, S217, N219, V220, S221, N222, N224, D266, G280, Q281, W282, C283, K310, D316.

Residues within 5.0 Å of D139 side chain in the three-dimensional structure of *Humicola insolens* Cel6B catalytic core domain and defined as being on the surface:

The following residues are found to be within 5.0 Å of an atom in the side chain of the catalytic acid (D139) defined as any of the atoms CB, CG, OD1 or OD2 in one of the two independent structures in the three-dimensional structure of *Humicola insolens* Cel6B catalytic core domain and are defined as being on the surface of the molecule: D92, P138, D139, A140, N143, D180, A182, W186.

Improved Stability Towards Anionic Surfactants

In order so stabilize an enzyme against denaturation by anionic tensides mutations/deletions of surface exposed residues are performed. The mutation is towards a more negatively charged residue, and preferably from a potentially positively charged residue (His, Lys or Arg, more preferably Arg). These points are thought to be anchor points for the anionic tensides especially the potentially positively charged residues and more preferably the Arginine residues.

The mutations from neutrally charged surface residues towards potentially negatively charged residues (Asp or Glu) should preferably be performed at points where the sequence holds the equivalent amide (Asn or Gln).

Mutating surface exposed residues towards more negatively charged residues for the core domain of *Humicola insolens* Cel6B comprises of the following mutations:

Neutral residues to be mutated to Asp or Glu (excluding His):

G3, N4, P5, S7, G8, T10, L11, L12, V13, N14, S15, Y17, S18, S19, Q23, Q26, A27, L29, S30, G32, Q34, T35, N36, A37, A38, Y42, V43, Q44, V47, G48, T49, Y51, W52, S54, N55, I56, F57, L58, L59, V64, I66, Q67, N68, A69, A71, A72, A74, G76, N78, P79, Y86, L88, C93, S94, A95, G96, S98, S99, G100, L102, L104, S105, Q106, N107,

G108, L109, N110, Y112, N114, V117, N118, P119, F120, A121, Q122, A126, A127, S128, V130, Q131, L136, P138, A140, I141, N143, M144, V145, T146, G147, T148, S149, A150, F151, C152, N154, G157, P158, Q159, Q160, I163, G164, Y165, A166, S168, Q169, L170, Q171, A172, S173, I175, L177, L179, A182, N183, G185, W186, W189, A190, L193, P195, Q198, A201, T202, L204, Q205, A207, G208, N209, N210, A211, I213, S217, N219, V220, S221, N222, N224, P225, Y226, S227, T228, S229, N230, P231, P232, P233, Y234, T235, S236, G237, S238, P239, P241, S244, T248, N249, N252, A253, Q256, G258, L259, P260, T261, Q262, I264, Q267, S268, V270, A271, L272, S273, G274, A275, S277, W279, G280, Q281, W282, C283, V285, N286, P287, G289, F290, G291, Q292, P293, F294, T295, T296, N297, T298, N299, N300, P301, N302, V303, I306, V309, P311, G317, Q318, C319, G320, M321, G322, G323, A324, P325, A326, A327, G328, M329, W330, F331, A333, Y334, Q336, M337, Q340, N341, A342, I346.

Preferably at the points where the sequence already contains Asn or Gln, which in the core domain of *Humicola insolens* Cel6B comprises residues: N4, N14, Q23, Q26, Q34, N36, Q44, N55, Q67, N68, N78, Q106, N107, N110, N114, N118, Q122, Q131, N143, N154, Q159, Q160, Q169, Q171, N183, Q198, Q205, N209, N210, N219, N222, N224, N230, N249, N252, Q256, Q262, Q267, Q281, N286, Q292, N297, N299, N300, N302, Q318, Q336, Q340, N341.

Preferably mutations should be performed at surface exposed positions containing a potentially positively charged residue (His, Lys or Arg) mutating to a residue not belonging to this group. In the core domain of *Humicola insolens* Cel6B this comprises residues: R9, K20, R25, R31, K39, K41, K46, R60, R70, K73, R75, R91, K103, R111, K113, K123, K125, R153, R156, H174, H176, K192, K206, K212, R214, R245, R255, R257, R276, K310, H343, most preferably: R9, R25, R31, R60, R70, R75, R91, R111, R153, R156, R214, R245, R255, R257, R276.

Improved thermal stability

A enzyme can be stabilized towards thermal denaturation can by substitution of a naturally occurring amino acid residue other than proline with a proline residue at positions in the structure where the backbone dihedral angle φ (phi) are in the

interval [$-90^{\circ} < \varphi < -40^{\circ}$] and where the back bone amide proton of the residue to be substituted does not participate as donor in a hydrogen bond. Preferably the residue should be outside α-helical regions as well as β-strand regions. More preferably the back bone ψ (psi) dihedral angle should be in the intervals: [$-180^{\circ} < \psi < -150^{\circ}$] or [$-80^{\circ} < \psi < 10^{\circ}$] or [$100^{\circ} < \psi < 180^{\circ}$]. The dihedral angles as well as the potential hydrogen bonds involving the back bone amide proton can be investigated using the program DSSP. A hydrogen bond involving the back bone amide proton is defined as those with an energy determined by DSSP smaller than or equal to -1.4 kcal/mole.

Applying this method to the three-dimensional structure of the catalyic core domain of *Humicola insolens* Cel6B rsults in the following positions as targets for Xxx -> Pro mutations: N4, S7, L11, V13, N14, S15, D16, Y17, D22, Q23, T24, T35, N36, G48, S54, I56, F57, L58, R60, D63, A74, L88, R91, C93, S94, S98, S99, E101, L104, S105, L109, N110, S128, D129, I141, G142, G147, S149, A150, F151, C152, R156, G157, S173, G184, G185, W189, A190, D191, L193, E194, N209, N210, A211, V220, N224, Y226, Y234, R245, Q256, Q262, S268, S273, S277, W279, G280, C283, V285, Q292, F294, N297, N302, K310, G312, D316, Q318, G322, A324, A326, A327, D332, A333, Y334, W330, D344, E345, preferably N4, S7, V13, N14, G48, S54, I56, F57, L58, L88, R91, C93, S94, S98, S99, E101, L104, S105, S128, D129, G147, S149, S173, W189, A190, D191, N209, N210, A211, V220, N224, Y226, Y234, S268, S273, S277, W279, G280, C283, V285, Q292, F294, N297, N302, K310, G312, D316, Q318, G322, A324, A326, A327, W330, D344, E345, more preferably N4, S7, V13, N14, G48, S54, I56, F57, L58, L88, R91, C93, S94, S98, S99, E101, L104, S105, AER128, D129, S149, S173, W189, A190, D191, N209, N210, A211, V220, N224, Y226, Y234, S268, S273, S277, W279, G280, C283, V285, Q292, F294, N302, K310, G312, D316, G322, A324, A326, A327, W330, D344, E345.

Capping of alpha-helices

Due to the helix dipole created due to alignment of the many polar atoms in the backbone an alpha-helix exhibits a dipo-

le with a partial positive charge at the N-terminus and a partial negative charge at the C-terminus. This dipole can be further stabilized by introduction of opposite charges or partial charges at the ends or removal of equal charges or partial charges. The most well know example is the N-capping of the N-terminal of the alpha Helix with a Asn residue which can satisfy a hydrogen bond donor in the back bone which would else be unpaired. Alternatively an Asp residue located at the N-terminal can counteract the partial positive charge and stabilize the enzyme structure. From a structural analysis other substitutions can be found which will place a residue close to a helix terminal with a stabilizing charge or partial charge.

Examination of the tree-dimensional structure of *Humicola insolens* Cel6B catalytic core domain results in the following potentially stabilizing mutations in the N-terminal regions of the alpha helices: N14D ; N55D ; S149N,D ; N183D ; K192Q ; F331N,D.

And the following potentially stabilizing mutations in the C-terminal regions of the alpha-helices: V13K,R ; E77Q ; S128N,Q,K,R ; T148N,Q,K,R ; S168N,Q,K,R ; L193Q ; D344N,Q,K,R.

Satisfaction of internal hydrogen bonds and salt bridges

"Unsatisfied" hydrogen bond donors and/or acceptors as well as unpaired buried charged groups from potentially charged residues can destabilize an enzyme structure. Removing the unsatisfied partner by mutagenesis to a residue without these properties or mutation of neighboring residues to fulfill the unsatisfied hydrogen bond or salt bridge can most often stabilize the enzyme structure. These unsatisfied hydrogen bond/salt bridge partners can be found using the *WHAT CHECK* routine which is an integral part of the *WHAT IF* program.

Applying the *WHAT CHECK* routine on the complete three dimensional structure of *Humicola insolens* Cel6B catalytic core domain followed by subsequent visual analysis using *InsightII* results in the following mutations to satisfy unsatisfied hydrogen bonds/salt bridges: L11Y ; T49A,S,N,Q,V,M,G ; N55G,A,S,T ; N87Q,E,D ; A95S,T,N,D,Q,E ; I175T,G,A,V ; A182G ; L187G,A,S,T,N,Q,H ; K192Q,E,N,D,S,T ; S268G,A,V,L,I,F ; F249N,Q,S,T,D,E ; M337Q,Y,N,D,T,E.

Residues on the surface of internal cavities

This defines residues which are found to be on the surface of internal cavities in the enzyme structure. To detect these the options *CAVITY* and *AACAVI* in the *WHAT IF* program is used. A probe radius of 1.4 Å is typically used to detect internal cavities where mutations could be performed. The mutations are preferentially mutating to a residue with a larger side chain, thereby decreasing the volume of the cavity, or mutating to a residue with a smaller side chain, thereby increasing the volume of the cavity making it possible for a water molecule to be accommodated in the cavity. Both methods can increase the thermal stability of the enzyme structure. Residues having their side chain exposed to the cavity as determined by the *AACAVI* command in WHAT IF or by visual inspection using e.g. the *InsightII* program are prefered targets for mutagenesis.

In *Humicola insolens* Cel6B this results to: V13, N14, Y17, S18, L21, K39, V40, V43, V47, N87, L88, R91, D92, C93, K103, R111, V117, F120, L136, E137, P138, A140, I141, N143, Q159, I163, A166, L170, L179, D180, S217, V220, N222, I264, D266, Q267, R269, N284, F290, V309, G313, E314, S315, F331, Y334.

Preferably the following residues having their side chains exposed to the cavity in a favorable position for mutagenesis as judged visually using *InsightII*: V13, N14, Y17, S18, L21, V40, V43, L88, V117, F120, L136, E137, A140, I141, Q159, I163, A166, L170, L179, S217, V220, N284, F290, V309, S315, F331, Y334.

Preferably the following mutations to decrease the volume of said cavities (in one letter code): V13L,I,F,Y,W; N14,Q,Y,V,L,I,F,W; Y17W; S18T,N,Q,V,L,I,F,Y,W; L21F,Y,W,I ; V40I,L,F,Y,W ; V43I,L,F,Y,W ; L88F,Y,W,I ; V117L,I,F,Y,W ; F120Y,W ; L136I,F,Y,W ; E137Q,I,L,F,Y,W ; A140S,T,V,L,I,F,Y,W ; I141L,F,Y,W ; Q159I,F,Y,W,L ; I163L,F,Y,W ; L170I,F,Y,W ; L179I,F,Y,W ; S217T,N,Q,V,L,I,F,Y,W ; V220L,I,F,Y,W ; N284Q ; F290Y,W ; V309L,I,F,Y,W ; S315T ; F331Y,W ; Y334W.

The following mutations are preferred in order to increase the volume of said cavities: V13G,A,S,T ; N14G,A,S,T ; Y17G,A,S,T,F,V,L,I ; S18G,A ; L21V,G,A,S,T ; V40G,A,S,T ; V43G,A,S,T ; L88V,G,A,S,T ; V117G,A,S,T ; F120V,I,L,G,A,S,T ; L136V,G,A,S,T ; E137G,A,S,T,D,N,V ; A140G ; I141V,G,A,S,T ;

Q159N,G,A,S,T,V ; I163V,G,A,S,T ; A166G ; L170V,G,A,S,T ; L179V,G,A,S,T ; S217G,A ; V220G,A,S,T ; N284G,A,S,T ; F290I,V,L ; V309G,A,S,T ; F331V,L,I,G,A,S,T ; Y334F,V,L,I,G,A,S,T.

Improved Stability Towards Oxidation

Some amino acid residues are sensitive towards oxidation by oxidative detergents and will in their oxidized form have altered properties e.g. catalytic properties, stability, pH optimum. Surface exposed residues of the type Met are most labile towards oxidation. Tyr or Trp are also known to be labile towards oxidation. Mutation of surface exposed residues of the above mentioned type will remove the sensitivity towards oxidation. This comprises the residues: Y17, Y42, Y51, W52, Y86, Y112, M144, Y165, W186, W189, Y226, Y234, W279, W282, M321, M329, W330, Y334, M337, more preferably those which are also present in the binding cleft: Y51, W52, Y86, W186, W189, W279, W282.

Altered pH profile

The pH profile of an enzyme can be altered by changing the electrostatic environment of the active site. Especially the electrostatic field at the position of the catalytic proton donor is a determinant of the alkalinisity of the enzyme. A change in the electrostatic field at the point of the catalytic proton donor towards a more negative electrostatic field can increase the apparent pK_a of the catalytic proton donor, and thereby increase the activity at more alkaline conditions. This change in the electrostatic field can be obtained by mutations/deletions or insertions of residues in the vicinity of the catalytic proton donor as follows:

1) Deletion of potentially positively charged residues.

2) Mutation of potentially positively charged residues to neutral or potentially negatively charged residues.

3) Mutation of neutral residues to potentially negatively charged residues.

4) Insertion of potentially negatively charged residues.

The mutations should preferably be made to surface exposed residues and preferably not more than 15Å from the catalytic proton donor, more preferably not more than 10Å from the cataly-

tic proton donor and most preferably nor more than 5Å from the catalytic proton donor.

Insertions/deletions should only be made in loop/turn regions and preferably not more than 15Å from the catalytic proton donor.

This results in the following positions:

1) R9del, R31del, R75del, R91del, K103del, H174del, K192del, K212del, R214del, R257del, R269del, R276del, K310del, H343del.

2) R9, K20, R25, R31, K39, K41, K46, R60, R70, K73, R75, R91, K103, R111, K113, K123, K125, R153, R156, H174, H176, K192, K206, K212, R214, R245, R255, R257, R276, K310, H343 to neutral or potentially negatively charged residues (i.e. All 20 except R,K,H), preferably on the surface within 10Å of the catalytic proton donor (D139): R91, K310

3) G3, N4, P5, S7, G8, T10, L11, L12, V13, N14, S15, Y17, S18, S19, Q23, Q26, A27, L29, S30, G32, Q34, T35, N36, A37, A38, Y42, V43, Q44, V47, G48, T49, Y51, W52, S54, N55, I56, F57, L58, L59, V64, I66, Q67, N68, A69, A71, A72, A74, G76, N78, P79, Y86, L88, C93, S94, A95, G96, S98, S99, G100, L102, L104, S105, Q106, N107, G108, L109, N110, Y112, N114, V117, N118, P119, F120, A121, Q122, A126, A127, S128, V130, Q131, L136, P138, A140, I141, N143, M144, V145, T146, G147, T148, S149, A150, F151, C152, N154, G157, P158, Q159, Q160, I163, G164, Y165, A166, S168, Q169, L170, Q171, A172, S173, I175, L177, L179, A182, N183, G185, W186, W189, A190, L193, P195, Q198, A201, T202, L204, Q205, A207, G208, N209, N210, A211, I213, S217, N219, V220, S221, N222, N224, P225, Y226, S227, T228, S229, N230, P231, P232, P233, Y234, T235, S236, G237, S238, P239, P241, S244, T248, N249, N252, A253, Q256, G258, L259, P260, T261, Q262, I264, Q267, S268, V270, A271, L272, S273, G274, A275, S277, W279, G280, Q281, W282, C283, V285, N286, P287, G289, F290, G291, Q292, P293, F294, T295, T296, N297, T298, N299, N300, P301, N302, V303, I306, V309, P311, G317, Q318, C319, G320, M321, G322, G323, A324, P325, A326, A327, G328, M329, W330, F331, A333, Y334, Q336, M337, Q340, N341, A342, I346.

Preferably on the surface within 10Å of the catalytic proton donor (D139): W52, Y86, L88, C93, S94, A95, S99, L136, P138,

A140, I141, n143, M144, V145, T146, C152, Q159, I163, L179, A182, N183, G185, W186, S217, N219, V220, S221, N222, N224, G280, Q281, W282, C283, more preferably on the surface within 5Å of the catalytic proton donor (D139): P138, A140, N143, A182, W186.

Altering the pH profile of an enzyme (2)

Another method to alter the pH profile of an enzyme is to mutate the residues in or close to the binding cleft. This will create a variant enzyme where the electrostatics of the active site will be changed either directly due to altered charges or partial charges in the binding cleft, or due to altered geometry around the active site changing the degree of burial of the active site residues. These changes should be made not more than 5Å from a residue in the binding cleft, and preferably not more than 2.5Å from a residue in the binding cleft most preferably mutating residues in the binding cleft.

Definition of *Humicola*-like cellulases and their sequences

The present invention includes variants of sequences having at least 35% identity to the catalytic core domain of *Humicola insolens* Cel6B. Percent sequence identity is determined by conventional methods, by means of computer programs known in the art such as GAP provided in the GCG program package (Program Manual for the Wisconsin Package, Version 8, August 1994, Genetics Computer Group, 575 Science Drive, Madison, Wisconsin, USA 53711) as disclosed in Needleman, S.B. and Wunsch, C.D., (1970), Journal of Molecular Biology, 48, 443-453, which is hereby incorporated by reference in its entirety, ie using the GAP algorithm of the GCG package version 8 using a gap creation penalty of 3.00 and a gap extension penalty of 0.10 and all other parameters are kept at their default value. The catalytic core domain of *Humicola insolens* Cel6B is defined as the 347 residues used for the X-ray structure determination (positions 27-374 of SEQ ID NO:4). Only the part of the sequence extending from the start of the alignment to the catalytic core domain of *Humicola insolens* Cel6B to the last residue aligning with to the catalytic core domain of *Humicola insolens* Cel6B are included (as seen in Figure 1 (1A+1B)). Following known sequences are within the

definition: *Orpinomyces sp.* SPTREMBL entry p78720 [residues 128-459], *Orpinomyces sp.* SPTREMBL entry p78721 [residues 127-449], *Humicola insolens* Cel6B (endocellulase CMC 38K in patent WO9311249-A) [residues 27-379], *Trichoderma reesei* (*Trichoderma longibrachiatum*) SwissProt entry p07987 [residues 112-471], *Fusarium oxysporum* SwissProt entry p46236 [residues 103-462], *Humicola insolens* Cel6A and patent number JP 1996126492-A/1) [residues 112-473], *Acremonium cellulolyticus* (patent number WO9733982-A1) [residues 86-437], *Penicillium purpurogenum* (Presented at The Annual Meeting of Japan Society for Bioscience, Biotechnology, and Agrochemistry, April 1-2, 1998, Nagoya, Japan. The sequence was recorded on videotape) [residues 96-457], *Agaricus bisporus* SwissProt entry p49075 [residues 87-438], *Phanerochaete chrysosporium* SPTREMBL entry q02321 [residues 103-460], *Neocallimastix patriciarum* SPTREMBL entry q12646 [residues 98-428], *Humicola insolens* EMBL entry E11341 [residues 115-476].

Multiple alignment of sequences of the invention

Sequences having more than 35.0% identity to the catalytic core domain of *Humicola insolens* Cel6B as defined above can be aligned using the multiple alignment program Clustal W ver. 1.7 (Thompson *et.al.* Nucleic Acids Research Vol. 22 , No. 22 pp. 4673-4680 (1994)) which is able to include secondary structure information in the alignment. The secondary structure of the catalytic core domain of *Humicola insolens* Cel6B as defined previously in fig. 4 for the α-helix and β-strand regions can be included in the input for a *profile/structure alignment*. Only positions belonging to α-helical region or a β-strand region in both og the independant molecules are considered as being in a to α-helical region or a β-strand region respectively (see also fig. 1A/B). Using this information as the *1st profile* and using the remaining sequences as the *2nd profile*. The option *Align sequences to 1st profile* is used to align sequences to the sequence of the catalytic core domain of *Humicola insolens* Cel6B taking the structural elements into account. No alterations is made to the default parameters. The result of the alignment are

seen in figure 1A/B. This alignment is used to identify the positions equivalent to positions in the catalytic core domain of *Humicola insolens* Cel6B.

Alignment of new sequence to known alignment

To align a new sequence with more than 35.0% sequence identity as determined by the GAP program to the known alignment in Fig. 4 the *Profile/Structure alignment* option of ClustalW is applied. Only the part of the sequence extending from the start of the GAP alignment to the catalytic core domain of *Humicola insolens* Cel6B to the last residue aligning with to the catalytic core domain of *Humicola insolens* Cel6B are included. The alignment in Fig. 4 is read as *1st profile* and the new sequence is read as *2nd profile*. The option *Align sequences to 1st profile* is used to align a new sequence to the sequence alignment in Fig. 4. No alterations is made to the default parameters. From such an alignment residues in a new sequence at positions equivalent to positions in the catalytic core domain of *Humicola insolens* Cel6B can be identified.

Structure based sequence alignment

An more preferred way of identifying equivalent residues between a "new" sequence ant the catalytic core domain of *Humicola insolens* Cel6B is to determine the three-dimensional X-ray structure fold of the "new" sequence and apply a structure based sequence alignment as implemented in the *Modeler 97.0* program included in the *Homology 97.0* package from MSI INC. using the *MALIGN3D* command with the *GAP_PENALTIES_3D* parameters set to 0.0 and 1.75 and the *FIT_ATOMS* set to CA. This alignment will find residues at structurally equivalent positions, *i.e.* having their CA atoms not more than 3.5Å apart in a structural superposition. From this alignment equivalent residues in a "new" sequence can be identified.

Increased color care activity by trimming of binding cleft loops.

The *Humicola insolens* Cel6B is able to perform color clarification as seen in examples 1 and 2 and has activity towards CMC. *Neocallimastix patriciarum* SPTREMBL entry q12646 have been shown to have activity towards CMC, the same is believed to be the case for *Orpinomyces sp.* SPTREMBL entry p78720 and *Orpinomyces sp.* SPTREMBL entry p78721. The origin of this is thought to be a more open binding cleft caused by one or more of the binding cleft encompassing loops being shorter that in the other fungal family 6 cellulases, preferably one of the four longer loops: Y86-N107, N219-D242, L272-P287 or W308-F331 (*Humicola insolens* Cel6B numbering) or equivalent regions as determined by the multiple sequence alignment, more preferably the regions N219-D242 or W308-F331 which are seen in the multiple sequence alignment to be different in length. The extent of the loop regions can be trimmed (ie made shorter) by deletion of individual residues which together with mutation of neighboring residues can optimize the color care effect. The loop manipulations can be performed using site directed mutagenesis, region specific random mutagenesis using spiked oligonucleotides, protein family shuffling or by other methods.

Methods of preparing endoglucanase variants

Several methods for introducing mutations into genes are known in the art. Cloning of cellulase-encoding DNA sequences and methods for generating mutations at specific sites within the cellulase-encoding sequence are mentioned in the following.

Cloning a DNA sequence encoding a cellulase

The DNA sequence encoding a parent cellulase may be isolated from any cell or microorganism producing the cellulase in question, using various methods well known in the art. First, a genomic DNA and/or cDNA library should be constructed using chromosomal DNA or messenger RNA from the organism that produces the cellulase to be studied. Then, if the amino acid sequence of the cellulase is known, homologous, labelled oligonucleotide probes may be synthesized and used to identify cellulase-encoding clones from a genomic library prepared from the organism in question. Alternatively, a labelled oligonucleotide probe containing sequences

homologous to a known cellulase gene could be used as a probe to identify cellulase-encoding clones, using hybridization and washing conditions of lower stringency.

A method for identifying cellulase-encoding clones involves inserting cDNA into an expression vector, such as a plasmid, transforming cellulase-negative fungi with the resulting cDNA library, and then plating the transformed fungi onto agar containing a substrate for cellulase, thereby allowing clones expressing the cellulase to be identified.

Alternatively, the DNA sequence encoding the enzyme may be prepared synthetically by established standard methods, e.g. the phosphoroamidite method. In the phosphoroamidite method, oligonucleotides are synthesized, e.g. in an automatic DNA synthesizer, purified, annealed, ligated and cloned in appropriate vectors.

Finally, the DNA sequence may be of mixed genomic and synthetic origin, mixed synthetic and cDNA origin or mixed genomic and cDNA origin, prepared by ligating fragments of synthetic, genomic or cDNA origin (as appropriate, the fragments corresponding to various parts of the entire DNA sequence), in accordance with standard techniques. The DNA sequence may also be prepared by polymerase chain reaction (PCR) using specific primers.

Site-directed mutagenesis

Once a cellulase-encoding DNA sequence has been isolated, and desirable sites for mutation identified, mutations may be introduced using synthetic oligonucleotides. These oligonucleotides contain nucleotide sequences flanking the desired mutation sites; mutant nucleotides are inserted during oligonucleotide synthesis. In a specific method, a single-stranded gap of DNA, bridging the cellulase-encoding sequence, is created in a vector carrying the cellulase gene. Then the synthetic nucleotide, bearing the desired mutation, is annealed to a homologous portion of the single-stranded DNA. The remaining gap is then filled in with T7 DNA polymerase and the construct is ligated using T4 ligase. A specific example of this method is described in Morinaga et al. (1984). US 4,760,025 discloses the introduction of oligonucleotid s encoding multiple mutations by performing minor alterations of the cassette. However, an even greater variety of mutations can be introduced at any one time by the Morinaga method, because a

multitude of oligonucleotides, of various lengths, can be introduced.

Another method of introducing mutations into cellulase-encoding DNA sequences is described in Nelson and Long (1989). It involves the 3-step generation of a PCR fragment containing the desired mutation introduced by using a chemically synthesized DNA strand as one of the primers in the PCR reactions. From the PCR-generated fragment, a DNA fragment carrying the mutation may be isolated by cleavage with restriction endonucleases and reinserted into an expression plasmid.

Random mutagenesis

The random mutagenesis of a DNA sequence encoding a parent cellulase may conveniently be performed by use of any method known in the art.

For instance, the random mutagenesis may be performed by use of a suitable physical or chemical mutagenizing agent, by use of a suitable oligonucleotide, or by subjecting the DNA sequence to PCR generated mutagenesis. Furthermore, the random mutagenesis may be performed by use of any combination of these mutagenizing agents.

The mutagenizing agent may, e.g., be one which induces transitions, transversions, inversions, scrambling, deletions, and/or insertions.

Examples of a physical or chemical mutagenizing agent suitable for the present purpose include ultraviolet (UV) irradiation, hydroxylamine, N-methyl-N'-nitro-N-nitrosoguanidine (MNNG), O-methyl hydroxylamine, nitrous acid, ethyl methane sulphonate (EMS), sodium bisulphite, formic acid, and nucleotide analogues.

When such agents are used, the mutagenesis is typically performed by incubating the DNA sequence encoding the parent enzyme to be mutagenized in the presence of the mutagenizing agent of choice under suitable conditions for the mutagenesis to take place, and selecting for mutated DNA having the desired properties.

When the mutagenesis is performed by the use of an oligonucleotide, the oligonucleotide may be doped or spiked with the three non-parent nucleotides during the synthesis of the oligonucleotide at the positions which are to be changed. The doping or spiking may be done so that codons for unwanted amino acids are avoided. The doped or spiked oligonucleotide can be incorporated into the

DNA encoding the cellulase enzyme by any published technique, using e.g. PCR, LCR or any DNA polymerase and ligase.

When PCR-generated mutagenesis is used, either a chemically treated or non-treated gene encoding a parent cellulase enzyme is subjected to PCR under conditions that increase the mis-incorporation of nucleotides (Deshler 1992; Leung et al., Technique, Vol.1, 1989, pp. 11-15).

A mutator strain of *E. coli* (Fowler et al., Molec. Gen. Genet., 133, 1974, pp. 179-191), *S. cereviseae* or any other microbial organism may be used for the random mutagenesis of the DNA encoding the cellulase enzyme by e.g. transforming a plasmid containing the parent enzyme into the mutator strain, growing the mutator strain with the plasmid and isolating the mutated plasmid from the mutator strain. The mutated plasmid may subsequently be transformed into the expression organism.

The DNA sequence to be mutagenized may conveniently be present in a genomic or cDNA library prepared from an organism expressing the parent cellulase enzyme. Alternatively, the DNA sequence may be present on a suitable vector such as a plasmid or a bacteriophage, which as such may be incubated with or otherwise exposed to the mutagenizing agent. The DNA to be mutagenized may also be present in a host cell either by being integrated in the genome of said cell or by being present on a vector harboured in the cell. Finally, the DNA to be mutagenized may be in isolated form. It will be understood that the DNA sequence to be subjected to random mutagenesis is preferably a cDNA or a genomic DNA sequence.

In some cases it may be convenient to amplify the mutated DNA sequence prior to the expression step or the screening step being performed. Such amplification may be performed in accordance with methods known in the art, the presently preferred method being PCR-generated amplification using oligonucleotide primers prepared on the basis of the DNA or amino acid sequence of the parent enzyme.

Subsequent to the incubation with or exposure to the mutagenizing agent, the mutated DNA is expressed by culturing a suitable host cell carrying the DNA sequence under conditions allowing expression to take place. The host cell used for this purpose may be one which has been transformed with the mutated DNA sequence,

optionally present on a vector, or one which was carried the DNA sequence encoding the parent enzyme during the mutagenesis treatment. Examples of suitable host cells are fungal hosts such as *Aspergillus niger* or *Aspergillus oryzae*.

The mutated DNA sequence may further comprise a DNA sequence encoding functions permitting expression of the mutated DNA sequence.

Localized random mutagenesis

The random mutagenesis may advantageously be localized to a part of the parent cellulase in question. This may, e.g., be advantageous when certain regions of the enzyme have been identified to be of particular importance for a given property of the enzyme, and when modified are expected to result in a variant having improved properties. Such regions may normally be identified when the tertiary structure of the parent enzyme has been elucidated and related to the function of the enzyme.

The localized random mutagenesis is conveniently performed by use of PCR-generated mutagenesis techniques as described above or any other suitable technique known in the art.

Alternatively, the DNA sequence encoding the part of the DNA sequence to be modified may be isolated, e.g. by being inserted into a suitable vector, and said part may subsequently be subjected to mutagenesis by use of any of the mutagenesis methods discussed above.

With respect to the screening step in the above-mentioned method of the invention, this may conveniently be performed by use of aa filter assay based on the following principle:

A microorganism capable of expressing the mutated cellulase enzyme of interest is incubated on a suitable medium and under suitable conditions for the enzyme to be secreted, the medium being provided with a double filter comprising a first protein-binding filter and on top of that a second filter exhibiting a low protein binding capability. The microorganism is located on the second filter. Subsequent to the incubation, the first filter comprising enzymes secreted from the microorganisms is separated from the second filter comprising the microorganisms. The first filter is subjected to screening for the desired enzymatic activity and the corresponding microbial colonies present on the second filter are identified.

The filter used for binding the enzymatic activity may be any protein binding filter e.g. nylon or nitrocellulose. The top filter carrying the colonies of the expression organism may be any filter that has no or low affinity for binding proteins e.g. cellulose acetate or Durapore™. The filter may be pretreated with any of the conditions to be used for screening or may be treated during the detection of enzymatic activity.

The enzymatic activity may be detected by a dye, fluorescence, precipitation, pH indicator, IR-absorbance or any other known technique for detection of enzymatic activity.

The detecting compound may be immobilized by any immobilizing agent, e.g., agarose, agar, gelatine, polyacrylamide, starch, filter paper, cloth; or any combination of immobilizing agents.

Expression of cellulase variants

According to the invention, a DNA sequence encoding the variant produced by methods described above, or by any alternative methods known in the art, can be expressed, in enzyme form, using an expression vector which typically includes control sequences encoding a promoter, operator, ribosome binding site, translation initiation signal, and, optionally, a repressor gene or various activator genes.

The recombinant expression vector carrying the DNA sequence encoding a cellulase variant of the invention may be any vector which may conveniently be subjected to recombinant DNA procedures, and the choice of vector will often depend on the host cell into which it is to be introduced. Thus, the vector may be an autonomously replicating vector, i.e. a vector which exists as an extrachromosomal entity, the replication of which is independent of chromosomal replication, e.g. a plasmid, a bacteriophage or an extrachromosomal element, minichromosome or an artificial chromosome. Alternatively, the vector may be one which, when introduced into a host cell, is integrated into the host cell genome and replicated together with the chromosome(s) into which it has been integrated.

In the vector, the DNA sequence should be operably connected to a suitable promoter sequence. The promoter may be any DNA sequence which shows transcriptional activity in the host cell of choice and may be derived from genes encoding proteins either homologous or heterologous to the host cell. Examples of suitable promoters

for directing the transcription of the DNA sequence encoding a cellulase variant of the invention, especially in a fungal host, are those derived from the gene encoding *A. oryzae* TAKA amylase, *Rhizomucor miehei* aspartic proteinase, *A. niger* neutral α-amylase, *A. niger* acid stable α-amylase, *A. niger* glucoamylase, *Rhizomucor miehei* lipase, *A. oryzae* alkaline protease, *A. oryzae* triose phosphate isomerase or *A. nidulans* acetamidase.

Examples of suitable promoters for use in bacterial host cells include the promoter of the *Bacillus stearothermophilus* maltogenic amylase gene, the *Bacillus licheniformis* alpha-amylase gene, the *Bacillus amyloliquefaciens* alpha-amylase gene, the *Bacillus subtilis* alkaline protease gen, or the *Bacillus pumilus* xylosidase gene, or the phage Lambda P_R or P_L promoters or the E. coli lac, trp or tac promoters.

The expression vector of the invention may also comprise a suitable transcription terminator and, in eukaryotes, polyadenylation sequences operably connected to the DNA sequence encoding the cellulase variant of the invention. Termination and polyadenylation sequences may suitably be derived from the same sources as the promoter.

The vector may further comprise a DNA sequence enabling the vector to replicate in the host cell in question. Examples of such sequences are the origins of replication of plasmids pUC19, pACYC177, pUB110, pE194, pAMB1 and pIJ702.

The vector may also comprise a selectable marker, e.g. a gene, the product of which complements a defect in the host cell, such as one which confers antibiotic resistance such as ampicillin, kanamycin, chloramphenicol or tetracyclin resistance. Furthermore, the vector may comprise *Aspergillus* selection markers such as amdS, argB, niaD and sC, a marker giving rise to hygromycin resistance, or the selection may be accomplished by co-transformation, e.g. as described in WO 91/17243.

The procedures used to ligate the DNA construct of the invention encoding a cellulase variant, the promoter, terminator and other elements, respectively, and to insert them into suitable vectors containing the information necessary for replication, are well known to persons skilled in the art (cf., for instance, Sambrook et al. (1989)).

The cell of the invention, either comprising a DNA construct or an expression vector of the invention as defined above, is advantageously used as a host cell in the recombinant production of a cellulase variant of the invention. The cell may be transformed with the DNA construct of the invention encoding the variant, conveniently by integrating the DNA construct (in one or more copies) in the host chromosome. This integration is generally considered to be an advantage as the DNA sequence is more likely to be stably maintained in the cell. Integration of the DNA constructs into the host chromosome may be performed according to conventional methods, e.g. by homologous or heterologous recombination. Alternatively, the cell may be transformed with an expression vector as described above in connection with the different types of host cells.

The cell of the invention may be a cell of a higher organism such as a mammal or an insect, but is preferably a microbial cell, e.g. a bacterial or fungal cell.

Examples of bacterial host cells which on cultivation are capable of producing the enzyme of the invention may be a gram-positive bacteria such as a strain of *Bacillus*, in particular *Bacillus alkalophilus*, *Bacillus amyloliquefaciens*, *Bacillus brevis*, *Bacillus lautus*, *Bacillus lentus*, *Bacillus licheniformis*, *Bacillus circulans*, *Bacillus coagulans*, *Bacillus megatherium*, *Bacillus stearothermophilus*, *Bacillus subtilis* and *Bacillus thuringiensis*, a strain of *Lactobacillus*, a strain of *Streptococcus*, a strain of *Streptomyces*, in particular *Streptomyces lividans* and *Streptomyces murinus*, or the host cell may be a gram-negative bacteria such as a strain of *Escherichia coli*.

The transformation of the bacteria may be effected by protoplast transformation, electroporation, conjugation, or by using competent cells in a manner known per se (cf. e.g. Sambrook et al., *supra*).

When expressing the enzyme in a bacteria such as *Escherichia coli*, the enzyme may be retained in the cytoplasm, typically as insoluble granules (known as inclusion bodies), or may be directed to the periplasmic space by a bacterial secretion sequence. In the former case, the cells are lysed and the granules are recovered and denatured after which the enzyme

is refolded by diluting the denaturing agent. In the latter case, the enzyme may be recovered from the periplasmic space by disrupting the cells, e.g. by sonication or osmotic shock, to release the contents of the periplasmic space and recovering the enzyme.

When expressing the enzyme in a gram-positive bacteria such as a strain of *Bacillus* or a strain of *Streptomyces*, the enzyme may be retained in the cytoplasm, or may be directed to the extracellular medium by a bacterial secretion sequence.

Examples of a fungal host cell which on cultivation are capable of producing the enzyme of the invention is e.g. a strain of *Aspergillus* or *Fusarium*, in particular *Aspergillus awamori*, *Aspergillus nidulans*, *Aspergillus niger*, *Aspergillus oryzae*, and *Fusarium oxysporum*, and a strain of *Trichoderma*, preferably *Trichoderma harzianum*, *Trichoderma reesei* and *Trichoderma viride*.

Fungal cells may be transformed by a process involving protoplast formation and transformation of the protoplasts followed by regeneration of the cell wall in a manner known *per se*. The use of a strain of *Aspergillus* as a host cell is described in EP 238 023 (Novo Nordisk A/S), the contents of which are hereby incorporated by reference.

Examples of a host cell of yeast origin which on cultivation are capable of producing the enzyme of the invention is e.g. a strain of *Hansenula* sp., a strain of *Kluyveromyces sp.*, in particular *Kluyveromyces lactis* and *Kluyveromyces marcianus*, a strain of *Pichia sp.*, a strain of *Saccharomyces*, in particular *Saccharomyces carlsbergensis*, *Saccharomyces* cerevisae, *Saccharomyces kluyveri* and *Saccharomyces uvarum*, a strain of *Schizosaccharomyces sp.*, in particular *Schizosaccharomyces pombe*, and a strain of *Yarrowia sp.*, in particular *Yarrowia lipolytica*.

Examples of a host cell of plant origin which on cultivation are capable of producing the enzyme of the invention is e.g. a plant cell of *Solanum tuberosum* or *Nicotiana tabacum*.

In a yet further aspect, the present invention relates to a method of producing a cellulase variant of the invention, which method comprises cultivating a host cell as described above under

conditions conducive to the production of the variant and recovering the variant from the cells and/or culture medium.

The medium used to cultivate the cells may be any conventional medium suitable for growing the host cell in question and obtaining expression of the cellulase variant of the invention. Suitable media are available from commercial suppliers or may be prepared according to published recipes (e.g. as described in catalogues of the American Type Culture Collection).

The cellulase variant secreted from the host cells may conveniently be recovered from the culture medium by well-known procedures, including separating the cells from the medium by centrifugation or filtration, and precipitating proteinaceous components of the medium by means of a salt such as ammonium sulphate, followed by the use of chromatographic procedures such as ion exchange chromatography, affinity chromatography, or the like.

The cleaning or detergent or fabric conditioning compositions

During washing and wearing, dyestuff from dyed fabrics or garment will conventionally bleed from the fabric which then looks faded and worn. Removal of surface fibers from the fabric will partly restore the original colours and looks of the fabric. By the term "colour clarification", as used herein, is meant the partly restoration of the initial colours of fabric or garment throughout multiple washing cycles.

The term "de-pilling" denotes removing of pills from the fabric surface.

The term "soaking liquor" denotes an aqueous liquor in which laundry may be immersed prior to being subjected to a conventional washing process. The soaking liquor may contain one or more ingredients conventionally used in a washing or laundering process.

The term "washing liquor" denotes an aqueous liquor in which laundry is subjected to a washing process, i.e. usually a combined chemical and mechanical action either manually or in a washing machine. Conventionally, the washing liquor is an aqueous solution of a powder or liquid detergent composition.

The term "rinsing liquor" denotes an aqueous liquor in which laundry is immersed and treated, conventionally

immediately after being subjected to a washing process, in order to rinse the laundry, i.e. essentially remove the detergent solution from the laundry. The rinsing liquor may contain a fabric conditioning or softening composition.

In another aspect, the present invention also relates to a process for machine treatment of fabrics which process comprises treating fabric during a rinse cycle of a machine washing process with a rinse solution containing the composition according to the invention.

The laundry subjected to the composition or the method of the present invention may be conventional washable laundry. Preferably, the major part of the laundry is sewn or unsewn fabrics, including knits, wovens, denims, yarns, and toweling, made from cotton, cotton blends or natural or manmade cellulosics (e.g. originating from xylan-containing cellulose fibers such as from wood pulp) or blends thereof. Examples of blends are blends of cotton or rayon/viscose with one or more companion material such as wool, synthetic fibers (e.g. polyamide fibers, acrylic fibers, polyester fibers, polyvinyl alcohol fibers, polyvinyl chloride fibers, polyvinylidene chloride fibers, polyurethane fibers, polyurea fibers, aramid fibers), and cellulose-containing fibers (e.g. rayon/viscose, ramie, flax/linen, jute, cellulose acetate fibers, lyocell). Cleaning composition according to claim 1 wherein the composition is a fabric softener or fabric conditioning composition for the treatment of fabrics.

The cleaning composition of the invention may be in the form of a fabric softener composition comprising from about 1% to about 90%, preferably from about 2% to about 50%, by weight of one or more cationic fabric softening agents, nonionic fabric softening agents, or mixtures thereof. In case of cationic fabric softening agents, such agents may advantageously comprise quaternary ammonium softening agents or amine precursors thereof. A Specific example of a useful quaternary ammonium softening agent is N,N-di(2-tallowoyl-oxy-ethyl)-N,N-dimethyl ammonium chloride.

DETERGENT AND FABRIC SOFTENER DISCLOSURE AND EXAMPLES

Surfactant system

The cleaning compositions according to the present invention comprise a surfactant system, wherein the surfactant can be selected from nonionic and/or anionic and/or cationic and/or ampholytic and/or zwitterionic and/or semi-polar surfactants.

The surfactant is typically present at a level from 0.1% to 60% by weight.

The surfactant is preferably formulated to be compatible with enzyme components present in the composition. In liquid or gel compositions the surfactant is most preferably formulated in such a way that it promotes, or at least does not degrade, the stability of any enzyme in these compositions.

Preferred systems to be used according to the present invention comprise as a surfactant one or more of the nonionic and/or anionic surfactants described herein.

Polyethylene, polypropylene, and polybutylene oxide condensates of alkyl phenols are suitable for use as the nonionic surfactant of the surfactant systems of the present invention, with the polyethylene oxide condensates being preferred. These compounds include the condensation products of alkyl phenols having an alkyl group containing from about 6 to about 14 carbon atoms, preferably from about 8 to about 14 carbon atoms, in either a straight chain or branched-chain configuration with the alkylene oxide. In a preferred embodiment, the ethylene oxide is present in an amount equal to from about 2 to about 25 moles, more preferably from about 3 to about 15 moles, of ethylene oxide per mole of alkyl phenol. Commercially available nonionic surfactants of this type include Igepal™ CO-630, marketed by the GAF Corporation; and Triton™ X-45, X-114, X-100 and X-102, all marketed by the Rohm & Haas Company. These surfactants are commonly referred to as alkylphenol alkoxylates (e.g., alkyl phenol ethoxylates).

The condensation products of primary and secondary aliphatic alcohols with about 1 to about 25 moles of ethylene oxide are suitable for use as the nonionic surfactant of the nonionic surfactant systems of the present invention. The alkyl chain of the aliphatic alcohol can either be straight or branched, primary or secondary, and generally contains from

about 8 to about 22 carbon atoms. Preferred are the condensation products of alcohols having an alkyl group containing from about 8 to about 20 carbon atoms, more preferably from about 10 to about 18 carbon atoms, with from about 2 to about 10 moles of ethylene oxide per mole of alcohol. About 2 to about 7 moles of ethylene oxide and most preferably from 2 to 5 moles of ethylene oxide per mole of alcohol are present in said condensation products. Examples of commercially available nonionic surfactants of this type include Tergitol™ 15-S-9 (The condensation product of C_{11}-C_{15} linear alcohol with 9 moles ethylene oxide), Tergitol™ 24-L-6 NMW (the condensation product of C_{12}-C_{14} primary alcohol with 6 moles ethylene oxide with a narrow molecular weight distribution), both marketed by Union Carbide Corporation; Neodol™ 45-9 (the condensation product of C_{14}-C_{15} linear alcohol with 9 moles of ethylene oxide), Neodol™ 23-3 (the condensation product of C_{12}-C_{13} linear alcohol with 3.0 moles of ethylene oxide), Neodol™ 45-7 (the condensation product of C_{14}-C_{15} linear alcohol with 7 moles of ethylene oxide), Neodol™ 45-5 (the condensation product of C_{14}-C_{15} linear alcohol with 5 moles of ethylene oxide) marketed by Shell Chemical Company, Kyro™ EOB (the condensation product of C_{13}-C_{15} alcohol with 9 moles ethylene oxide), marketed by The Procter & Gamble Company, and Genapol LA 050 (the condensation product of C_{12}-C_{14} alcohol with 5 moles of ethylene oxide) marketed by Hoechst. Preferred range of HLB in these products is from 8-11 and most preferred from 8-10.

Also useful as the nonionic surfactant of the surfactant systems of the present invention are alkylpolysaccharides disclosed in US 4,565,647, having a hydrophobic group containing from about 6 to about 30 carbon atoms, preferably from about 10 to about 16 carbon atoms and a polysaccharide, e.g. a polyglycoside, hydrophilic group containing from about 1.3 to about 10, preferably from about 1.3 to about 3, most preferably from about 1.3 to about 2.7 saccharide units. Any reducing saccharide containing 5 or 6 carbon atoms can be used, e.g., glucose, galactose and galactosyl moieties can be substituted for the glucosyl moieties (optionally the hydrophobic group is attached at the 2-, 3-, 4-, etc. positions thus giving a glucose or galactose as opposed to a glucoside or galactoside). The

intersaccharide bonds can be, e.g., between the one position of the additional saccharide units and the 2-, 3-, 4-, and/or 6-positions on the preceding saccharide units.

The preferred alkylpolyglycosides have the formula

$$R^2O(C_nH_{2n}O)_t(glycosyl)_x$$

wherein R^2 is selected from the group consisting of alkyl, alkylphenyl, hydroxyalkyl, hydroxyalkylphenyl, and mixtures thereof in which the alkyl groups contain from about 10 to about 18, preferably from about 12 to about 14, carbon atoms; n is 2 or 3, preferably 2; t is from 0 to about 10, pre-ferably 0; and x is from about 1.3 to about 10, preferably from about 1.3 to about 3, most preferably from about 1.3 to about 2.7. The glycosyl is preferably derived from glucose. To prepare these compounds, the alcohol or alkylpolyethoxy alcohol is formed first and then reacted with glucose, or a source of glucose, to form the glucoside (attachment at the 1-position). The additional glycosyl units can then be attached between their 1-position and the preceding glycosyl units 2-, 3-, 4-, and/or 6-position, preferably predominantly the 2-position.

The condensation products of ethylene oxide with a hydrophobic base formed by the condensation of propylene oxide with propylene glycol are also suitable for use as the additional nonionic surfactant systems of the present invention. The hydrophobic portion of these compounds will preferably have a molecular weight from about 1500 to about 1800 and will exhibit water insolubility. The addition of polyoxyethylene moieties to this hydrophobic portion tends to increase the water solubility of the molecule as a whole, and the liquid character of the product is retained up to the point where the polyoxyethylene content is about 50% of the total weight of the condensation product, which corresponds to condensation with up to about 40 moles of ethylene oxide. Examples of compounds of this type include certain of the commercially available Pluronic™ surfactants, marketed by BASF.

Also suitable for use as the nonionic surfactant of the nonionic surfactant system of the present invention, are the condensation products of ethylene oxide with the product

resulting from the reaction of propylene oxide and ethylenediamine. The hydrophobic moiety of these products consists of the reaction product of ethylenediamine and excess propylene oxide, and generally has a molecular weight of from about 2500 to about 3000. This hydrophobic moiety is condensed with ethylene oxide to the extent that the condensation product contains from about 40% to about 80% by weight of polyoxyethylene and has a molecular weight of from about 5,000 to about 11,000. Examples of this type of nonionic surfactant include certain of the commercially available Tetronic™ compounds, marketed by BASF.

Preferred for use as the nonionic surfactant of the surfactant systems of the present invention are polyethylene oxide condensates of alkyl phenols, condensation products of primary and secondary aliphatic alcohols with from about 1 to about 25 moles of ethyleneoxide, alkylpolysaccharides, and mixtures hereof. Most preferred are C_8-C_{14} alkyl phenol ethoxylates having from 3 to 15 ethoxy groups and C_8-C_{18} alcohol ethoxylates (preferably C_{10} avg.) having from 2 to 10 ethoxy groups, and mixtures thereof.

Highly preferred nonionic surfactants are polyhydroxy fatty acid amide surfactants of the formula

$$R^2 - \underset{\underset{O}{||}}{C} - \underset{\underset{R^1}{||}}{N} - Z,$$

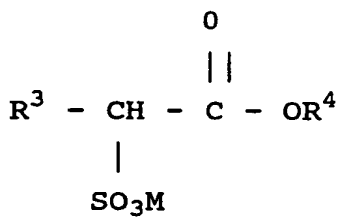
wherein R^1 is H, or R^1 is C_{1-4} hydrocarbyl, 2-hydroxyethyl, 2-hydroxypropyl or a mixture thereof, R^2 is C_{5-31} hydrocarbyl, and Z is a polyhydroxyhydrocarbyl having a linear hydrocarbyl chain with at least 3 hydroxyls directly connected to the chain, or an alkoxylated derivative thereof. Preferably, R^1 is methyl, R^2 is straight C_{11-15} alkyl or C_{16-18} alkyl or alkenyl chain such as coconut alkyl or mixtures thereof, and Z is derived from a reducing sugar such as glucose, fructose, maltose or lactose, in a reductive amination reaction.

Highly preferred anionic surfactants include alkyl alkoxylated sulfate surfactants. Examples hereof are water soluble salts or acids of the formula $RO(A)_mSO3M$ wherein R is an unsubstituted C_{10}-$C-_{24}$ alkyl or hydroxyalkyl group having a C_{10}-C_{24} alkyl component, preferably a C_{12}-C_{20} alkyl or hydro-xyalkyl,

more preferably C_{12}-C_{18} alkyl or hydroxyalkyl, A is an ethoxy or propoxy unit, m is greater than zero, typically between about 0.5 and about 6, more preferably between about 0.5 and about 3, and M is H or a cation which can be, for example, a metal cation (e.g., sodium, potassium, lithium, calcium, magnesium, etc.), ammonium or substituted-ammonium cation. Alkyl ethoxylated sulfates as well as alkyl propoxylated sulfates are contemplated herein. Specific examples of substituted ammonium cations include methyl-, dimethyl, trimethyl-ammonium cations and quaternary ammonium cations such as tetramethyl-ammonium and dimethyl piperdinium cations and those derived from alkylamines such as ethylamine, diethylamine, triethylamine, mixtures thereof, and the like. Exemplary surfactants are C_{12}-C_{18} alkyl polyethoxylate (1.0) sulfate (C_{12}-$C_{18}E(1.0)M$), C_{12}-C_{18} alkyl polyethoxylate (2.25) sulfate (C_{12}-$C_{18}(2.25)M$, and C_{12}-C_{18} alkyl polyethoxylate (3.0) sulfate (C_{12}-$C_{18}E(3.0)M$), and C_{12}-C_{18} alkyl polyethoxylate (4.0) sulfate (C_{12}-$C_{18}E(4.0)M$), wherein M is conveniently selected from sodium and potassium.

Suitable anionic surfactants to be used are alkyl ester sulfonate surfactants including linear esters of C_8-C_{20} carboxylic acids (i.e., fatty acids) which are sulfonated with gaseous SO_3 according to "The Journal of the American Oil Chemists Society", 52 (1975), pp. 323-329. Suitable starting materials would include natural fatty substances as derived from tallow, palm oil, etc.

The preferred alkyl ester sulfonate surfactant, especially for laundry applications, comprise alkyl ester sulfonate surfactants of the structural formula:



wherein R^3 is a C_8-C_{20} hydrocarbyl, preferably an alkyl, or combination thereof, R^4 is a C_1-C_6 hydrocarbyl, preferably an alkyl, or combination thereof, and M is a cation which forms a water soluble salt with the alkyl ester sulfonate. Suitable salt-forming cations include metals such as sodium, potassium,

and lithium, and substituted or unsubstituted ammonium cations, such as monoethanolamine, diethonolamine, and triethanolamine. Preferably, R^3 is C_{10}-C_{16} alkyl, and R^4 is methyl, ethyl or isopropyl. Especially preferred are the methyl ester sulfonates wherein R^3 is C_{10}-C_{16} alkyl.

Other suitable anionic surfactants include the alkyl sulfate surfactants which are water soluble salts or acids of the formula $ROSO_3M$ wherein R preferably is a C_{10}-C_{24} hydrocarbyl, preferably an alkyl or hydroxyalkyl having a C_{10}-C_{20} alkyl component, more preferably a C_{12}-C_{18} alkyl or hydroxyalkyl, and M is H or a cation, e.g., an alkali metal cation (e.g. sodium, potassium, lithium), or ammonium or substituted ammonium (e.g. methyl-, dimethyl-, and trimethyl ammonium cations and quaternary ammonium cations such as tetramethyl-ammonium and dimethyl piperdinium cations and quaternary ammonium cations derived from alkylamines such as ethylamine, diethylamine, triethylamine, and mixtures thereof, and the like). Typically, alkyl chains of C_{12}-C_{16} are preferred for lower wash temperatures (e.g. below about 50°C) and C_{16}-C_{18} alkyl chains are preferred for higher wash temperatures (e.g. above about 50°C).

Other anionic surfactants useful for detersive purposes can also be included in the cleaning, especially laundry detergent, compositions of the present invention. Theses can include salts (including, for example, sodium, potassium, ammonium, and substituted ammonium salts such as mono- di- and triethanolamine salts) of soap, C_8-C_{22} primary or secondary alkanesulfonates, C_8-C_{24} olefinsulfonates, sulfonated polycarboxylic acids prepared by sulfonation of the pyrolyzed product of alkaline earth metal citrates, e.g., as described in British patent specification No. 1,082,179, C_8-C_{24} alkylpolyglycolethersulfates (containing up to 10 moles of ethylene oxide); alkyl glycerol sulfonates, fatty acyl glycerol sulfonates, fatty oleyl glycerol sulfates, alkyl phenol ethylene oxide ether sulfates, paraffin sulfonates, alkyl phosphates, isethionates such as the acyl isethionates, N-acyl taurates, alkyl succinamates and sulfosuccinates, monoesters of sulfosuccinates (especially saturated and unsaturated C_{12}-C_{18} monoesters) and diesters of sulfosuccinates (especially saturated and unsaturated C_6-C_{12} diesters), acyl sarcosinates,

sulfates of alkylpolysaccharides such as the sulfates of alkylpolyglucoside (the nonionic nonsulfated compounds being described below), branched primary alkyl sulfates, and alkyl polyethoxy carboxylates such as those of the formula $RO(CH_2CH_2O)_k-CH_2COO-M+$ wherein R is a C_8-C_{22} alkyl, k is an integer from 1 to 10, and M is a soluble salt forming cation. Resin acids and hydrogenated resin acids are also suitable, such as rosin, hydrogenated rosin, and resin acids and hydrogenated resin acids present in or derived from tall oil.

Alkylbenzene sulfonates are highly preferred. Especially preferred are linear (straight-chain) alkyl benzene sulfonates (LAS) wherein the alkyl group preferably contains from 10 to 18 carbon atoms.

Further examples are described in "Surface Active Agents and Detergents" (Vol. I and II by Schwartz, Perrry and Berch). A variety of such surfactants are also generally disclosed in US 3,929,678, (Column 23, line 58 through Column 29, line 23, herein incorporated by reference).

When included therein, the cleaning, especially laundry detergent, compositions of the present invention typically comprise from about 1% to about 40%, preferably from about 3% to about 20% by weight of such anionic surfactants.

The cleaning compositions of the present invention may also contain cationic, ampholytic, zwitterionic, and semi-polar surfactants, as well as the nonionic and/or anionic surfactants other than those already described herein.

Cationic detersive surfactants suitable for use in the laundry detergent compositions of the present invention are those having one long-chain hydrocarbyl group. Examples of such cationic surfactants include the ammonium surfactants such as alkyltrimethylammonium halogenides, and those surfactants having the formula:

$$[R^2(OR^3)_y][R^4(OR^3)_y]_2R^5N+X-$$

wherein R^2 is an alkyl or alkyl benzyl group having from about 8 to about 18 carbon atoms in the alkyl chain, each R^3 is selected form the group consisting of $-CH_2CH_2-$, $-CH_2CH(CH_3)-$, $-CH_2CH(CH_2OH)-$, $-CH_2CH_2CH_2-$, and mixtures thereof; each R^4 is selected from the group consisting of C_1-C_4 alkyl, C_1-C_4 hydroxyalkyl, benzyl ring structures formed by joining the two R^4 groups, $-CH_2CHOHCHOHCOR^6CHOHCH_2OH$, wherein R^6 is any hexose or hexose polymer having a molecular weight less than about 1000, and hydrogen when y is not 0; R^5 is the same as R^4 or is an alkyl chain,wherein the total number of carbon atoms or R^2 plus R^5 is not more than about 18; each y is from 0 to about 10,and the sum of the y values is from 0 to about 15; and X is any compatible anion.

Highly preferred cationic surfactants are the water soluble quaternary ammonium compounds useful in the present composition having the formula:

$$R_1R_2R_3R_4N^+X^- \quad (i)$$

wherein R_1 is C_8-C_{16} alkyl, each of R_2, R_3 and R_4 is independently C_1-C_4 alkyl, C_1-C_4 hydroxy alkyl, benzyl, and $-(C_2H_{40})_xH$ where x has a value from 2 to 5, and X is an anion. Not more than one of R_2, R_3 or R_4 should be benzyl.

The preferred alkyl chain length for R_1 is $C_{12}-C_{15}$, particularly where the alkyl group is a mixture of chain lengths derived from coconut or palm kernel fat or is derived synthetically by olefin build up or OXO alcohols synthesis.

Preferred groups for R_2R_3 and R_4 are methyl and hydroxyethyl groups and the anion X may be selected from halide, methosulphate, acetate and phosphate ions.

Examples of suitable quaternary ammonium compounds of formulae (i) for use herein are:

coconut trimethyl ammonium chloride or bromide;

coconut methyl dihydroxyethyl ammonium chloride or bromide;

d cyl triethyl ammonium chloride;

decyl dimethyl hydroxyethyl ammonium chloride or bromide;

C_{12-15} dimethyl hydroxyethyl ammonium chloride or bromide;

coconut dimethyl hydroxyethyl ammonium chloride or bromide;

myristyl trimethyl ammonium methyl sulphate;
lauryl dimethyl benzyl ammonium chloride or bromide;
lauryl dimethyl (ethenoxy)$_4$ ammonium chloride or bromide;
choline esters (compounds of formula (i) wherein R_1 is

$CH_2-CH_2-O-C-C_{12-14}$ alkyl and $R_2R_3R_4$ are methyl).
||
O

di-alkyl imidazolines [compounds of formula (i)].

Other cationic surfactants useful herein are also described in US 4,228,044 and in EP 000 224.

When included therein, the laundry detergent compositions of the present invention typically comprise from 0.2% to about 25%, preferably from about 1% to about 8% by weight of such cationic surfactants.

Ampholytic surfactants are also suitable for use in the laundry detergent compositions of the present invention. These surfactants can be broadly described as aliphatic derivatives of secondary or tertiary amines, or aliphatic derivatives of heterocyclic secondary and tertiary amines in which the aliphatic radical can be straight- or branched-chain. One of the aliphatic substituents contains at least about 8 carbon atoms, typically from about 8 to about 18 carbon atoms, and at least one contains an anionic water-solubilizing group, e.g. carboxy, sulfonate, sulfate. See US 3,929,678 (column 19, lines 18-35) for examples of ampholytic surfactants.

When included therein, the cleaning, e.g. laundry detergent, compositions of the present invention typically comprise from 0.2% to about 15%, preferably from about 1% to about 10% by weight of such ampholytic surfactants.

Zwitterionic surfactants are also suitable for use in cleaning compositions. These surfactants can be broadly described as derivatives of secondary and tertiary amines, derivatives of heterocyclic secondary and tertiary amines, or derivatives of quaternary ammonium, quaternary phosphonium or tertiary sulfonium compounds. See US 3,929,678 (column 19, line 38 through column 22, line 48) for examples of zwitterionic surfactants.

When included therein, the cleaning compositions of the present invention typically comprise from 0.2% to about 15%, preferably from about 1% to about 10% by weight of such zwitterionic surfactants.

Semi-polar nonionic surfactants are a special category of nonionic surfactants which include water-soluble amine oxides containing one alkyl moiety of from about 10 to about 18 carbon atoms and 2 moieties selected from the group consisting of alkyl groups and hydroxyalkyl groups containing from about 1 to about 3 carbon atoms; watersoluble phosphine oxides containing one alkyl moiety of from about 10 to about 18 carbon atoms and 2 moieties selected from the group consisting of alkyl groups and hydroxyalkyl groups containing from about 1 to about 3 carbon atoms; and water-soluble sulfoxides containing one alkyl moiety from about 10 to about 18 carbon atoms and a moiety selected from the group consisting of alkyl and hydroxyalkyl moieties of from about 1 to about 3 carbon atoms.

Semi-polar nonionic detergent surfactants include the amine oxide surfactants having the formula:

$$R^3(OR^4)xN(R^5)2 \rightarrow O$$

wherein R^3 is an alkyl, hydroxyalkyl, or alkyl phenyl group or mixtures thereof containing from about 8 to about 22 carbon atoms; R^4 is an alkylene or hydroxyalkylene group containing from about 2 to about 3 carbon atoms or mixtures thereof; x is from 0 to about 3: and each R^5 is an alkyl or hydroxyalkyl group containing from about 1 to about 3 carbon atoms or a polyethylene oxide group containing from about 1 to about 3 ethylene oxide groups. The R^5 groups can be attached to each other, e.g., through an oxygen or nitrogen atom, to form a ring structure.

Th se amine oxide surfactants in particular include C_{10}-C_{18} alkyl dimethyl amine oxides and C_8-C_{12} alkoxy ethyl dihydroxy ethyl amine oxides.

When included therein, the cleaning compositions of the present invention typically comprise from 0.2% to about 15%,

preferably from about 1% to about 10% by weight of such semi-polar nonionic surfactants.

Builder system

The compositions according to the present invention may further comprise a builder system. Any conventional builder system is suitable for use herein including aluminosilicate materials, silicates, polycarboxylates and fatty acids, materials such as ethylenediamine tetraacetate, metal ion sequestrants such as aminopolyphosphonates, particularly ethylenediamine tetramethylene phosphonic acid and diethylene triamine pentamethylenephosphonic acid. Though less preferred for obvious environmental reasons, phosphate builders can also be used herein.

Suitable builders can be an inorganic ion exchange material, commonly an inorganic hydrated aluminosilicate material, more particularly a hydrated synthetic zeolite such as hydrated zeolite A, X, B, HS or MAP.

Another suitable inorganic builder material is layered silicate, e.g. SKS-6 (Hoechst). SKS-6 is a crystalline layered silicate consisting of sodium silicate ($Na_2Si_2O_5$).

Suitable polycarboxylates containing one carboxy group include lactic acid, glycolic acid and ether derivatives thereof as disclosed in Belgian Patent Nos. 831,368, 821,369 and 821,370. Polycarboxylates containing two carboxy groups include the water-soluble salts of succinic acid, malonic acid, (ethylenedioxy) diacetic acid, maleic acid, diglycollic acid, tartaric acid, tartronic acid and fumaric acid, as well as the ether carboxylates described in German Offenle-enschrift 2,446,686, and 2,446,487, US 3,935,257 and the sulfinyl carboxylates described in Belgian Patent No. 840,623. Polycarboxylates containing three carboxy groups include, in particular, water-soluble citrates, aconitrates and citraconates as well as succinate derivatives such as the carboxymethyloxysuccinates described in British Patent No. 1,379,241, lactoxysuccinates described in Netherlands Application 7205873, and the oxypolycarboxylate materials such as 2-oxa-1,1,3-propane tricarboxylates described in British Patent No. 1,387,447.

Polycarboxylates containing four carboxy groups include oxydisuccinates disclosed in British Patent No. 1,261,829, 1,1,2,2,-ethane tetracarboxylates, 1,1,3,3-propane tetrac7arboxylates containing sulfo substituents include the sulfosuccinate derivatives disclosed in British Patent Nos. 1,398,421 and 1,398,422 and in US 3,936,448, and the sulfonated pyrolysed citrates described in British Patent No. 1,082,179, while polycarboxylates containing phosphone substituents are disclosed in British Patent No. 1,439,000.

Alicyclic and heterocyclic polycarboxylates include cyclopentane-cis,cis-cis-tetracarboxylates, cyclopentadienide pentacarboxylates, 2,3,4,5-tetrahydro-furan - cis, cis, cis-tetracarboxylates, 2,5-tetrahydro-furan-cis, discarboxylates, 2,2,5,5,-tetrahydrofuran - tetracarboxylates, 1,2,3,4,5,6-hexane - hexacarboxylates and carboxymethyl derivatives of polyhydric alcohols such as sorbitol, mannitol and xylitol. Aromatic polycarboxylates include mellitic acid, pyromellitic acid and the phthalic acid derivatives disclosed in British Patent No. 1,425,343.

Of the above, the preferred polycarboxylates are hydroxy-carboxylates containing up to three carboxy groups per molecule, more particularly citrates.

Preferred builder systems for use in the present compositions include a mixture of a water-insoluble aluminosilicate builder such as zeolite A or of a layered silicate (SKS-6), and a water-soluble carboxylate chelating agent such as citric acid.

A suitable chelant for inclusion in the cleaning compositions in accordance with the invention is ethylenediamine-N,N'-disuccinic acid (EDDS) or the alkali metal, alkaline earth metal, ammonium, or substituted ammonium salts thereof, or mixtures thereof. Preferred EDDS compounds are the free acid form and the sodium or magnesium salt thereof. Examples of such preferred sodium salts of EDDS include Na_2EDDS and Na_4EDDS. Examples of such preferred magnesium salts of EDDS include MgEDDS and Mg_2EDDS. The magnesium salts are the most preferred for inclusion in compositions in accordance with the invention.

Preferred builder systems include a mixture of a water-insoluble aluminosilicate builder such as zeolite A, and a water soluble carboxylate chelating agent such as citric acid.

Other builder materials that can form part of the builder system for use in granular compositions include inorganic materials such as alkali metal carbonates, bicarbonates, silicates, and organic materials such as the organic phosphonates, amino polyalkylene phosphonates and amino polycarboxylates.

Other suitable water-soluble organic salts are the homo- or co-polymeric acids or their salts, in which the polycarboxylic acid comprises at least two carboxyl radicals separated form each other by not more than two carbon atoms.

Polymers of this type are disclosed in GB-A-1,596,756. Examples of such salts are polyacrylates of MW 2000-5000 and their copolymers with maleic anhydride, such copolymers having a molecular weight of from 20,000 to 70,000, especially about 40,000.

Detergency builder salts are normally included in amounts of from 5% to 80% by weight of the composition. Preferred levels of builder for liquid detergents are from 5% to 30%.

Enzymes

Preferred cleaning compositions, in addition to the family 6 endo-β-1,4-glucanase, comprise other enzyme(s) which provides cleaning performance and/or fabric care benefits.

Such enzymes include proteases, lipases, cutinases, amylases, other cellulases, peroxidases, oxidases (e.g. laccases).

Proteases: Any protease suitable for use in alkaline solutions can be used. Suitable proteases include those of animal, vegetable or microbial origin. Microbial origin is preferred. Chemically or genetically modified mutants are included. The protease may be a serine protease, preferably an alkaline microbial protease or a trypsin-like protease. Examples of alkaline proteases are subtilisins, especially those derived from Bacillus, e.g., subtilisin Novo, subtilisin Carlsberg, subtilisin 309, subtilisin 147 and subtilisin 168 (described in

WO 89/06279). Examples of trypsin-like proteases are trypsin (e.g. of porcine or bovine origin) and the Fusarium protease described in WO 89/06270.

Preferred commercially available protease enzymes include those sold under the trade names Alcalase, Savinase, Primase, Durazym, and Esperase by Novo Nordisk A/S (Denmark), those sold under the tradename Maxatase, Maxacal, Maxapem, Properase, Purafect and Purafect OXP by Genencor International, and those sold under the tradename Opticlean and Optimase by Solvay Enzymes. Protease enzymes may be incorporated into the compositions in accordance with the invention at a level of from 0.00001% to 2% of enzyme protein by weight of the composition, preferably at a level of from 0.0001% to 1% of enzyme protein by weight of the composition, more preferably at a level of from 0.001% to 0.5% of enzyme protein by weight of the composition, even more preferably at a level of from 0.01% to 0.2% of enzyme protein by weight of the composition.

Lipases: Any lipase suitable for use in alkaline solutions can be used. Suitable lipases include those of bacterial or fungal origin. Chemically or genetically modified mutants are included.

Examples of useful lipases include a Humicola lanuginosa lipase, e.g., as described in EP 258 068 and EP 305 216, a Rhizomucor miehei lipase, e.g., as described in EP 238 023, a Candida lipase, such as a C. antarctica lipase, e.g., the C. antarctica lipase A or B described in EP 214 761, a Pseudomonas lipase such as a P. alcaligenes and P. pseudoalcaligenes lipase, e.g., as described in EP 218 272, a P. cepacia lipase, e.g., as described in EP 331 376, a P. stutzeri lipase, e.g., as disclosed in GB 1,372,034, a P. fluorescens lipase, a Bacillus lipase, e.g., a B. subtilis lipase (Dartois et al., (1993), Biochemica et Biophysica acta 1131, 253-260), a B. stearothermophilus lipase (JP 64/744992) and a B. pumilus lipase (WO 91/16422).

Furthermore, a number of cloned lipases may be useful, including the Penicillium camembertii lipase described by Yamaguchi et al., (1991), Gene 103, 61-67), the Geotricum candidum lipase (Schimada, Y. et al., (1989), J. Biochem., 106, 383-388), and various Rhizopus lipases such as a R. delemar

lipase (Hass, M.J et al., (1991), Gene 109, 117-113), a R. niveus lipase (Kugimiya et al., (1992), Biosci. Biotech. Biochem. 56, 716-719) and a R. oryzae lipase.

Other types of lipolytic enzymes such as cutinases may also be useful, e.g., a cutinase derived from Pseudomonas mendocina as described in WO 88/09367, or a cutinase derived from Fusarium solani pisi (e.g. described in WO 90/09446).

Especially suitable lipases are lipases such as M1 Lipase™, Luma fast™ and Lipomax™ (Genencor), Lipolase™ and Lipolase Ultra™ (Novo Nordisk A/S), and Lipase P "Amano" (Amano Pharmaceutical Co. Ltd.).

The lipases are normally incorporated in the detergent composition at a level of from 0.00001% to 2% of enzyme protein by weight of the composition, preferably at a level of from 0.0001% to 1% of enzyme protein by weight of the composition, more preferably at a level of from 0.001% to 0.5% of enzyme protein by weight of the composition, even more preferably at a level of from 0.01% to 0.2% of enzyme protein by weight of the composition.

Amylases: Any amylase (a and/or b) suitable for use in alkaline solutions can be used. Suitable amylases include those of bacterial or fungal origin. Chemically or genetically modified mutants are included. Amylases include, for example, a-amylases obtained from a special strain of B. licheniformis, described in more detail in GB 1,296,839. Commercially available amylases are Duramyl™, Termamyl™, Fungamyl™ and BAN™ (available from Novo Nordisk A/S) and Rapidase™ and Maxamyl P™ (available from Genencor).

The amylases are normally incorporated in the detergent composition at a level of from 0.00001% to 2% of enzyme protein by weight of the composition, preferably at a level of from 0.0001% to 1% of enzyme protein by weight of the composition, more preferably at a level of from 0.001% to 0.5% of enzyme protein by weight of the composition, even more preferably at a level of from 0.01% to 0.2% of enzyme protein by weight of the composition.

Cellulases: Any cellulase suitable for use in alkaline solutions can be used. Suitable cellulases include those of bacterial or fungal origin. Chemically or genetically modified

mutants are included. Suitable cellulases are disclosed in US 4,435,307 which discloses fungal cellulases produced from *Humicola insolens*, in WO 96/34108 and WO 96/34092 which disclose bacterial alkalophilic cellulases (BCE 103) from *Bacillus*, and in WO 94/21801, US 5,475,101 and US 5,419,778 which disclose EG III cellulases from *Trichoderma*. Especially suitable cellulases are the cellulases having colour care benefits. Examples of such cellulases are cellulases described in European patent application No. 0 495 257 and the endoglucanase of the present invention. Commercially available cellulases include Celluzyme™ and Carezyme™ produced by a strain of *Humicola insolens* (Novo Nordisk A/S), KAC-500(B)™ (Kao Corporation), and Puradax™ (Genencor International).

Cellulases are normally incorporated in the detergent composition at a level of from 0.00001% to 2% of enzyme protein by weight of the composition, preferably at a level of from 0.0001% to 1% of enzyme protein by weight of the composition, more preferably at a level of from 0.001% to 0.5% of enzyme protein by weight of the composition, even more preferably at a level of from 0.01% to 0.2% of enzyme protein by weight of the composition.

Peroxidases/Oxidases :Peroxidase enzymes are used in combination with hydrogen peroxide or a source thereof (e.g. a percarbonate, perborate or persulfate). Oxidase enzymes are used in combination with oxygen. Both types of enzymes are used for "solution bleaching", i.e. to prevent transfer of a textile dye from a dyed fabric to another fabric when said fabrics are washed together in a wash liquor, preferably together with an enhancing agent as described in e.g. WO 94/12621 and WO 95/01426. Suitable peroxidases/oxidases include those of plant, bacterial or fungal origin. Chemically or genetically modified mutants are included.

Peroxidase and/or oxidase enzymes are normally incorporated in the detergent composition at a level of from 0.00001% to 2% of enzyme protein by weight of the composition, preferably at a level of from 0.0001% to 1% of enzyme protein by weight of the composition, more preferably at a level of from 0.001% to 0.5% of enzyme protein by weight of the composition,

even more preferably at a level of from 0.01% to 0.2% of enzyme protein by weight of the composition.

Mixtures of the above mentioned enzymes are encompassed herein, in particular a mixture of a protease, an amylase, a lipase and/or a cellulase.

The enzyme of the invention, or any other enzyme incorporated in the detergent composition, is normally incorporated in the detergent composition at a level from 0.00001% to 2% of enzyme protein by weight of the composition, preferably at a level from 0.0001% to 1% of enzyme protein by weight of the composition, more preferably at a level from 0.001% to 0.5% of enzyme protein by weight of the composition, even more preferably at a level from 0.01% to 0.2% of enzyme protein by weight of the composition.

Bleaching agents

Additional optional detergent ingredients that can be included in the cleaning or detergent compositions of the present invention include bleaching agents such as PB1, PB4 and percarbonate with a particle size of 400-800 microns. These bleaching agent components can include one or more oxygen bleaching agents and, depending upon the bleaching agent chosen, one or more bleach activators. When present oxygen bleaching compounds will typically be present at levels of from about 1% to about 25%. In general, bleaching compounds are optional added components in non-liquid formulations, e.g. granular detergents.

The bleaching agent component for use herein can be any of the bleaching agents useful for detergent compositions including oxygen bleaches as well as others known in the art.

The bleaching agent suitable for the present invention can be an activated or non-activated bleaching agent.

One category of oxygen bleaching agent that can be used encompasses percarboxylic acid bleaching agents and salts thereof. Suitable examples of this class of agents include magnesium monoperoxyphthalate hexahydrate, the magnesium salt of meta-chloro perbenzoic acid, 4-nonylamino-4-oxoperoxybutyric acid and diperoxydodecanedioic acid. Such bleaching agents are disclosed in US 4,483,781, US 740,446, EP 0 133 354 and US

4,412,934. Highly preferred bl aching agents also include 6-nonylamino-6-oxoperoxycaproic acid as described in US 4,634,551.

Another category of bleaching agents that can be used encompasses the halogen bleaching agents. Examples of hypohalite bleaching agents, for example, include trichloro isocyanuric acid and the sodium and potassium dichloroisocyanurates and N-chloro and N-bromo alkane sulphonamides. Such materials are normally added at 0.5-10% by weight of the finished product, preferably 1-5% by weight.

The hydrogen peroxide releasing agents can be used in combination with bleach activators such as tetra-acetylethylenediamine (TAED), nonanoyloxybenzenesulfonate (NOBS, described in US 4,412,934), 3,5-trimethyl-hexsanoloxybenzenesulfonate (ISONOBS, described in EP 120 591) or pentaacetylglucose (PAG), which are perhydrolyzed to form a peracid as the active bleaching species, leading to improved bleaching effect. In addition, very suitable are the bleach activators C8(6-octanamido-caproyl) oxybenzene-sulfonate, C9(6-nonanamido caproyl) oxybenzenesulfonate and C10 (6-decanamido caproyl) oxybenzenesulfonate or mixtures thereof. Also suitable activators are acylated citrate esters such as disclosed in European Patent Application No. 91870207.7.

Useful bleaching agents, including peroxyacids and bleaching systems comprising bleach activators and peroxygen bleaching compounds for use in cleaning compositions according to the invention are described in application USSN 08/136,626.

The hydrogen peroxide may also be present by adding an enzymatic system (i.e. an enzyme and a substrate therefore) which is capable of generation of hydrogen peroxide at the beginning or during the washing and/or rinsing process. Such enzymatic systems are disclosed in European Patent Application EP 0 537 381.

Bleaching agents other than oxygen bleaching agents are also known in the art and can be utilized herein. One type of non-oxygen bleaching agent of particular interest includes photoactivated bleaching agents such as the sulfonated zinc and-/or aluminium phthalocyanines. These materials can be deposited upon the substrate during the washing process. Upon irradiation with light, in the presence of oxygen, such as by hanging

clothes out to dry in the daylight, the sulfonated zinc phthalocyanine is activated and, consequently, the substrate is bleached. Preferred zinc phthalocyanine and a photoactivated bleaching process are described in US 4,033,718. Typically, detergent composition will contain about 0.025% to about 1.25%, by weight, of sulfonated zinc phthalocyanine.

Bleaching agents may also comprise a manganese catalyst. The manganese catalyst may, e.g., be one of the compounds described in "Efficient manganese catalysts for low-temperature bleaching", Nature 369, 1994, pp. 637-639.

Suds suppressors

Another optional ingredient is a suds suppressor, exemplified by silicones, and silica-silicone mixtures. Silicones can generally be represented by alkylated polysiloxane materials, while silica is normally used in finely divided forms exemplified by silica aerogels and xerogels and hydrophobic silicas of various types. Theses materials can be incorporated as particulates, in which the suds suppressor is advantageously releasably incorporated in a water-soluble or waterdispersible, substantially non surface-active detergent impermeable carrier. Alternatively the suds suppressor can be dissolved or dispersed in a liquid carrier and applied by spraying on to one or more of the other components.

A preferred silicone suds controlling agent is disclosed in US 3,933,672. Other particularly useful suds suppressors are the self-emulsifying silicone suds suppressors, described in German Patent Application DTOS 2,646,126. An example of such a compound is DC-544, commercially available form Dow Corning, which is a siloxane-glycol copolymer. Especially preferred suds controlling agent are the suds suppressor system comprising a mixture of silicone oils and 2-alkyl-alkanols. Suitable 2-alkyl-alkanols are 2-butyl-octanol which are commercially available under the trade name Isofol 12 R.

Such suds suppressor system are described in European Patent Application EP 0 593 841.

Especially preferred silicone suds controlling agents are described in European Patent Application No. 92201649.8. Said

compositions can comprise a silicone/ silica mixture in combination with fumed nonporous silica such as Aerosil^{R}.

The suds suppressors described above are normally employed at levels of from 0.001% to 2% by weight of the composition, preferably from 0.01% to 1% by weight.

Other components

Other components conventionally used in cleaning or detergent compositions may be employed such as soil-suspending agents, soil-releasing agents, optical brighteners, abrasives, bactericides, tarnish inhibitors, coloring agents, and/or encapsulated or nonencapsulated perfumes.

Especially suitable encapsulating materials are water soluble capsules which consist of a matrix of polysaccharide and polyhydroxy compounds such as described in GB 1,464,616.

Other suitable water soluble encapsulating materials comprise dextrins derived from ungelatinized starch acid esters of substituted dicarboxylic acids such as described in US 3,455,838. These acid-ester dextrins are, preferably, prepared from such starches as waxy maize, waxy sorghum, sago, tapioca and potato. Suitable examples of said encapsulation materials include N-Lok manufactured by National Starch. The N-Lok encapsulating material consists of a modified maize starch and glucose. The starch is modified by adding monofunctional substituted groups such as octenyl succinic acid anhydride.

Antiredeposition and soil suspension agents suitable herein include cellulose derivatives such as methylcellulose, carboxymethylcellulose and hydroxyethylcellulose, and homo- or co-polymeric polycarboxylic acids or their salts. Polymers of this type include the polyacrylates and maleic anhydride-acrylic acid copolymers previously mentioned as builders, as well as copolymers of maleic anhydride with ethylene, methylvinyl ether or methacrylic acid, the maleic anhydride constituting at least 20 mole percent of the copolymer. These materials are normally used at levels of from 0.5% to 10% by weight, more preferably form 0.75% to 8%, most preferably from 1% to 6% by weight of the composition.

Preferred optical brighteners are anionic in character, examples of which are disodium 4,4'-bis-(2-diethanolamino-4-

anilino -s- triazin-6-ylamino)stilbene-2:2' disulphonate, disodium 4, - 4'-bis-(2-morpholino-4-anilino-s-triazin-6-ylamino-stilbene-2:2' - disulphonate, disodium 4,4' - bis-(2,4-dianilino-s-triazin-6-ylamino)stilbene-2:2' - disulphonate, monosodium 4',4'' - bis-(2,4-dianilino-s-tri-azin-6 ylamino)stilbene-2-sulphonate, disodium 4,4' -bis-(2-anilino-4-(N-methyl-N-2-hydroxyethylamino)-s-triazin-6-ylamino)stilbene-2,2' - disulphonate, di-sodium 4,4' -bis-(4-phenyl-2,1,3-triazol-2-yl)-stilbene-2,2' disulphonate, di-so-dium 4,4'bis(2-anilino-4-(1-methyl-2-hydroxyethylamino)-s-triazin-6-ylamino)stilbene-2,2'disulphonate, sodium 2(stilbyl-4''-(naphtho-1',2':4,5)-1,2,3, - triazole-2''-sulphonate and 4,4'-bis(2-sulphostyryl)biphenyl.

Other useful polymeric materials are the polyethylene glycols, particularly those of molecular weight 1000-10000, more particularly 2000 to 8000 and most preferably about 4000. These are used at levels of from 0.20% to 5% more preferably from 0.25% to 2.5% by weight. These polymers and the previously mentioned homo- or co-polymeric poly-carboxylate salts are valuable for improving whiteness maintenance, fabric ash deposition, and cleaning performance on clay, proteinaceous and oxidizable soils in the presence of transition metal impurities.

Soil release agents useful in compositions of the present invention are conventionally copolymers or terpolymers of terephthalic acid with ethylene glycol and/or propylene glycol units in various arrangements. Examples of such polymers are disclosed in US 4,116,885 and 4,711,730 and EP 0 272 033. A particular preferred polymer in accordance with EP 0 272 033 has the formula:

$$(CH_3(PEG)_{43})_{0.75}(POH)_{0.25}[T\text{-}PO)_{2.8}(T\text{-}PEG)_{0.4}]T(POH)_{0.25}((PEG)_{43}CH_3)_{0.75}$$

where PEG is $-(OC_2H_4)O-$, PO is (OC_3H_6O) and T is $(pOOC_6H_4CO)$.

Also very useful are modified polyesters as random copolymers of dimethyl terephthalate, dimethyl sulfoisophthalate, ethylene glycol and 1,2-propanediol, the end groups consisting primarily of sulphobenzoate and secondarily of mono esters of ethylene glycol and/or 1,2-propanediol. The

target is to obtain a polymer capped at both end by sulphobenzoate groups, "primarily", in the pres nt context most of said copolymers herein will be endcapped by sulphobenzoate groups. However, some copolymers will be less than fully capped, and therefore their end groups may consist of monoester of ethylene glycol and/or 1,2-propanediol, thereof consist "secondarily" of such species.

The selected polyesters herein contain about 46% by weight of dimethyl terephthalic acid, about 16% by weight of 1,2-propanediol, about 10% by weight ethylene glycol, about 13% by weight of dimethyl sulfobenzoic acid and about 15% by weight of sulfoisophthalic acid, and have a molecular weight of about 3.000. The polyesters and their method of preparation are described in detail in EP 311 342.

Softening agents

Fabric softening agents can also be incorporated into cleaning compositions in accordance with the present invention. These agents may be inorganic or organic in type. Inorganic softening agents are exemplified by the smectite clays disclosed in GB-A-1 400898 and in US 5,019,292. Organic fabric softening agents include the water insoluble tertiary amines as disclosed in GB-A1 514 276 and EP 0 011 340 and their combination with mono C_{12}-C_{14} quaternary ammonium salts are disclosed in EP-B-0 026 528 and di-long-chain amides as disclosed in EP 0 242 919. Other useful organic ingredients of fabric softening systems include high molecular weight polyethylene oxide materials as disclosed in EP 0 299 575 and 0 313 146.

Levels of smectite clay are normally in the range from 5% to 15%, more preferably from 8% to 12% by weight, with the material being added as a dry mixed component to the remainder of the formulation. Organic fabric softening agents such as the water-insoluble tertiary amines or dilong chain amide materials are incorporated at levels of from 0.5% to 5% by weight, normally from 1% to 3% by weight whilst the high molecular weight polyethylene oxide materials and the water soluble cationic materials are added at levels of from 0.1% to 2%, normally from 0.15% to 1.5% by weight. These materials are normally added to the spray dried portion of the composition,

although in some instances it may be more convenient to add them as a dry mixed particulate, or spray them as molten liquid on to other solid components of the composition.

Polymeric dye-transfer inhibiting agents

The cleaning, especially laundry detergent, compositions according to the present invention may also comprise from 0.001% to 10%, preferably from 0.01% to 2%, more preferably form 0.05% to 1% by weight of polymeric dye- transfer inhibiting agents. Said polymeric dye-transfer inhibiting agents are normally incorporated into detergent compositions in order to inhibit the transfer of dyes from colored fabrics onto fabrics washed therewith. These polymers have the ability of complexing or adsorbing the fugitive dyes washed out of dyed fabrics before the dyes have the opportunity to become attached to other articles in the wash.

Especially suitable polymeric dye-transfer inhibiting agents are polyamine N-oxide polymers, copolymers of N-vinyl-pyrrolidone and N-vinylimidazole, polyvinylpyrrolidone polymers, polyvinyloxazolidones and polyvinylimidazoles or mixtures thereof.

Addition of such polymers also enhances the performance of the enzymes according the invention.

The cleaning composition according to the invention can be in liquid, paste, gels, bars or granular forms.

Non-dusting granulates may be produced, e.g., as disclosed in US 4,106,991 and 4,661,452 (both to Novo Industri A/S) and may optionally be coated by methods known in the art. Examples of waxy coating materials are poly(ethylene oxide) products (polyethyleneglycol, PEG) with mean molecular weights of 1000 to 20000; ethoxylated nonylphenols having from 16 to 50 ethylene oxide units; ethoxylated fatty alcohols in which the alcohol contains from 12 to 20 carbon atoms and in which there are 15 to 80 ethylene oxide units; fatty alcohols; fatty acids; and mono- and di- and triglycerides of fatty acids. Examples of film-forming coating materials suitable for application by fluid bed techniques are given in GB 1483591.

Granular compositions according to the present invention can also be in "compact form", i.e. they may have a relatively

higher density than conventional granular detergents or cleaning compositions, i.e. form 550 to 950 g/l; in such case, the granular detergent compositions according to the present invention will contain a lower amount of "Inorganic filler salt", compared to conventional granular detergents; typical filler salts are alkaline earth metal salts of sulphates and chlorides, typically sodium sulphate; "Compact" detergent typically comprise not more than 10% filler salt. The liquid compositions according to the present invention can also be in "concentrated form", in such case, the liquid detergent compositions according to the present invention will contain a lower amount of water, compared to conventional liquid detergents. Typically, the water content of the concentrated liquid detergent is less than 30%, more preferably less than 20%, most preferably less than 10% by weight of the detergent compositions.

In another preferred embodiment, the cleaning composition is a granular detergent composition containing no more than 40%, preferably no more than 15%, by weight of inorganic filler salt.

The compositions of the invention may for example, be formulated as hand and machine laundry detergent compositions including laundry additive compositions and compositions suitable for use in the pretreatment of stained fabrics, rinse added fabric softener compositions, and compositions for use in general household hard surface cleaning operations and dishwashing operations.

The following examples are meant to exemplify compositions for the present invention, but are not necessarily meant to limit or otherwise define the scope of the invention.

In the detergent compositions, the abbreviated component identifications have the following meanings:

LAS: Sodium linear C_{12} alkyl benzene sulphonate

TAS: Sodium tallow alkyl sulphate

XYAS: Sodium C_{1X} - C_{1Y} alkyl sulfate

SS: Secondary soap surfactant of formula 2-butyl octanoic acid

25EY: A C_{12} - C_{15} predominantly linear primary alcohol condensed with an average of Y moles of ethylene oxide

45EY: A C_{14} - C_{15} predominantly linear primary alcohol condensed with an average of Y moles of ethylene oxide

XYEZS: C_{1X} - C_{1Y} sodium alkyl sulfate condensed with an average of Z moles of ethylene oxide per mole

Nonionic: C_{13} - C_{15} mixed ethoxylated/propoxylated fatty alcohol with an average degree of ethoxylation of 3.8 and an average degree of propoxylation of 4.5 sold under the tradename Plurafax LF404 by BASF Gmbh

CFAA: C_{12} - C_{14} alkyl N-methyl glucamide

TFAA: C_{16} - C_{18} alkyl N-methyl glucamide

Silicate: Amorphous Sodium Silicate (SiO_2:Na_2O ratio = 2.0)

NaSKS-6: Crystalline layered silicate of formula d-$Na_2Si_2O_5$

Carbonate: Anhydrous sodium carbonate

Phosphate: Sodium tripolyphosphate

MA/AA: Copolymer of 1:4 maleic/acrylic acid, average molecular weight about 80,000

Polyacrylate: Polyacrylate homopolymer with an average molecular weight of 8,000 sold under the tradename PA30 by BASF Gmbh

Zeolite A: Hydrated Sodium Aluminosilicate of formula $Na_{12}(AlO_2SiO_2)_{12}$. $27H_2O$ having a primary particle size in the range from 1 to 10 micrometers

Citrate: Tri-sodium citrate dihydrate

Citric: Citric Acid

Perborate: Anhydrous sodium perborate monohydrate bleach, empirical formula $NaBO_2.H_2O_2$

PB4: Anhydrous sodium perborate tetrahydrate

Percarbonate: Anhydrous sodium percarbonate bleach of empirical formula $2Na_2CO_3.3H_2O_2$

TAED: Tetraacetyl ethylene diamine

CMC: Sodium carboxymethyl cellulose

DETPMP: Diethylene triamine penta (methylene phosphonic acid), marketed by Monsanto under the Tradename Dequest 2060

PVP: Polyvinylpyrrolidone polymer

EDDS: Ethylenediamine-N, N'-disuccinic acid, [S,S] isomer in the form of the sodium salt

Suds Suppressor: 25% paraffin wax Mpt 50°C, 17% hydrophobic silica, 58% paraffin oil

Granular Suds suppressor: 12% Silicone/silica, 18% stearyl alcohol, 70% starch in granular form
Sulphate: Anhydrous sodium sulphate
HMWPEO: High molecular weight polyethylene oxide
TAE 25: Tallow alcohol ethoxylate (25)

Detergent Example I

A granular fabric cleaning composition in accordance with the invention may be prepared as follows:

Sodium linear C_{12} alkyl benzene sulfonate	6.5
Sodium sulfate	15.0
Zeolite A	26.0
Sodium nitrilotriacetate	5.0
Enzyme of the invention	0.1
PVP	0.5
TAED	3.0
Boric acid	4.0
Perborate	18.0
Phenol sulphonate	0.1
Minors	Up to 100

Detergent Example II

A compact granular fabric cleaning composition (density 800 g/l) in accord with the invention may be prepared as follows:

45AS	8.0
25E3S	2.0
25E5	3.0
25E3	3.0
TFAA	2.5
Zeolite A	17.0
NaSKS-6	12.0
Citric acid	3.0
Carbonate	7.0
MA/AA	5.0
CMC	0.4

Enzyme of the invention	0.1
TAED	6.0
Percarbonate	22.0
EDDS	0.3
Granular suds suppressor	3.5
water/minors	Up to 100%

Detergent Example III

Granular fabric cleaning compositions in accordance with the invention which are especially useful in the laundering of coloured fabrics were prepared as follows:

LAS	10.7	-
TAS	2.4	-
TFAA	-	4.0
45AS	3.1	10.0
45E7	4.0	-
25E3S	-	3.0
68E11	1.8	-
25E5	-	8.0
Citrate	15.0	7.0
Carbonate	-	10
Citric acid	2.5	3.0
Zeolite A	32.1	25.0
Na-SKS-6	-	9.0
MA/AA	5.0	5.0
DETPMP	0.2	0.8
Enzyme of the invention	0.10	0.05
Silicate	2.5	-
Sulphate	5.2	3.0
PVP	0.5	-
Poly (4-vinylpyridine)-N-Oxide/copolymer of vinyl-imidazole and vinyl-pyrrolidone	-	0.2
P rborate	1.0	-
Phenol sulfonate	0.2	-
Water/Minors	Up to 100%	

Detergent Example IV

Granular fabric cleaning compositions in accordance with the invention which provide "Softening through the wash" capability may be prepared as follows:

45AS	-	10.0
LAS	7.6	-
68AS	1.3	-
45E7	4.0	-
25E3	-	5.0
Coco-alkyl-dimethyl hydroxy-ethyl ammonium chloride	1.4	1.0
Citrate	5.0	3.0
Na-SKS-6	-	11.0
Zeolite A	15.0	15.0
MA/AA	4.0	4.0
DETPMP	0.4	0.4
Perborate	15.0	-
Percarbonate	-	15.0
TAED	5.0	5.0
Smectite clay	10.0	10.0
HMWPEO	-	0.1
Enzyme of the invention	0.10	0.05
Silicate	3.0	5.0
Carbonate	10.0	10.0
Granular suds suppressor	1.0	4.0
CMC	0.2	0.1
Water/Minors	Up to 100%	

Detergent Example V

Heavy duty liquid fabric cleaning compositions in accordance with the invention may be prepared as follows:

	I	II
LAS acid form	-	25.0
Citric acid	5.0	2.0
25AS acid form	8.0	-
25AE2S acid form	3.0	-
25AE7	8.0	-
CFAA	5	-

70

DETPMP	1.0	1.0
Fatty acid	8	-
Oleic acid	-	1.0
Ethanol	4.0	6.0
Propanediol	2.0	6.0
Enzyme of the invention	0.10	0.05
Coco-alkyl dimethyl hydroxy ethyl ammonium chloride	-	3.0
Smectite clay	-	5.0
PVP	2.0	-
Water / Minors	Up to 100%	

Cellulolytic Activity

The cellulolytic activity may be measured in endo-cellulase units (ECU), determined at pH 7.5, with carboxymethyl cellulose (CMC) as substrate.

The ECU assay quantifies the amount of catalytic activity present in the sample by measuring the ability of the sample to reduce the viscosity of a solution of carboxy-methylcellulose (CMC). The assay is carried out at 40°C; pH 7.5; 0.1M phosphate buffer; time 30 min; using a relative enzyme standard for reducing the viscosity of the CMC Hercules 7 LFD substrate; enzyme concentration approx. 0.15 ECU/ml. The arch standard is defined to 8200 ECU/g.

EXAMPLE 1

A. Wet storage test for cellulases

The following example is intended to describe the invention that different inverting endoglucanases may differ significantly in respect to their ability to cause fabric weakening upon wet storage.

To illustrate that major differences can be observed between inverting endoglucanases from different cellulase families the following experiment can be made:

A new bleached wowen cotton (app. 350 g/m2) swatch (25cmx25cm) is incubated at elevated dosage (100 kECU/l) for 7 days in Tris buffer pH 7 at 25°C and after this prolonged incubation the fabric is rinsed in MilliQ-water (25°C) for 10 min-

utes, line-dried and equilibrated in a constant climate room (60%RH, 20°C) for 48 hours. Finally the loss in tensile strength is measured on an Instron.

The relative tensile strength loss (%TSL) is quantified versus "enzyme blank", i.e. an experiment where the fabric is incubated in buffer without any enzyme present and the cellulase is then classified into one of the following 4 groups:

Class A (%TSL is in the range of [0%-25%])
Class B (%TSL is in the range of [25%-50%])
Class C (%TSL is in the range of [50%-75%])
Class D (%TSL is in the range of [75%-100%])

In the following example two inverting endoglucanases were tested:

a. ~43 kD EGV from the fungal species *Humicola insolens*, DSM 1800, belonging to family 45 of glycosyl hydrolases and described in detail in WO 91/17243.

b. EGVI from the fungal species *Humicola insolens*, DSM 1800, belonging to the cellulase family 6 and having the amino acid sequence listed in SEQ ID NO:4. The DNA sequence encoding for this enzyme is listed in SEQ ID NO:3 (the coding region corresponding to positions 16-1356).

The following results were obtained from the evaluation:

Enzyme	Tensile strength class
EG V	C
EG VI	A

It is thus found that the cellulase belonging to family 6 is much less prone to cause tensile strength loss upon prolonged wet storage.

B. Colour Clarification in Terg-O-Meter

In this example the capability of family 6 endoglucanases to rejuvenate the colour of cotton textile is demonstrated using an assay for determining colour care benefits, i.e. "Color Clarification", of cotton cloth in a miniaturised washing machine, the 100 ml Terg-O-Meter.

250 ml beakers with 100 ml buffer (or detergent) eas positioned in a Terg-O-Meter and equilibrated to 35°C. Then two 7x7 cm swatches of black, woven cotton cloth was added to each beaker, the stirrers were put in motion, and finally enzyme was added: A) A blank, B) Three different dosages of a standard (e.g. the commercial available enzyme preparation Celluzyme™), and C) Two different dosages of the family 6 endoglucanase. Incubation then proceeded for 30 minutes at 35°C

After the 30 minutes of incubation the swatches were rinsed in cold tap water for 10 minutes and dried in a tumble dryer.

The cycle of incubation and rinsing/drying was repeated once - or until the swatches clearly differed in respect to colour and/or fuzz in the swatches surface.

Finally the swatches were graded against the blank (no enzyme) and the standard (e.g. Celluzyme) swatches. Visual grading was performed by a panel of trained graders, and colour was measured with a remission spectrometer. Results are expressed in the table below as "Colour Clarification" (CC) of the swatches obtained per activity unit of enzyme.

Enzyme	**Cellulase Family**	**CC - black, woven**
Celluzyme™	multi-component	1.0
Blank	no enzyme	0.0
Humicola insolens EG VI	Family 6	0.8

EXAMPLE 2

"Colour Clarification" in Household Laundering

The capability of a family 6 endoglucanase to rejuvenate the colour of cotton textile was demonstrated using an assay for determining "Colour Clarification" of cotton cloth in a normal household washing machine.

Swatches of 7x7 cm swatches of black, woven cotton cloth were stapled to one common piece of cloth, and 7x7 cm swatches of blue knitted cotton cloth was stapled to another piece of

cloth. This together with a standardised household load of laundry cloth was entered into a household washing machine.

Such loads were laundered in pH 7 buffer, and at the relevant step in the washing cycle enzyme was added: A) A blank, B) Three different dosages of a standard (e.g. the commercially available cellulase preparation Celluzyme™), and C) Two different dosages of the family 6 endoglucanase.

After laundering the loads were dried in a tumble dryer, and the cycle of incubation and rinsing/drying were repeated for a total of 14 times.

Finally the swatches were graded against the blank (no enzyme) and the standard (e.g. Celluzyme™) swatches. Visual grading was performed by a panel of trained graders, and colour was measured with a remission spectrometer. Results are expressed in the table below as "Colour Clarification" (CC) of the swatches obtained per activity unit of enzyme.

Enzyme	**CC - black, woven (rejuvenation)**
Celluzyme™	0.6
Blank	0.0
Humicola insolens EG VI	1.6

EXAMPLE 3

Cloning of *Humicola insolens* Cel6A and EG VI (Cel6B)

Cel6A and B cDNA clones were identified in a *Humicola insolens* cDNA expression library (disclosed in WO 91/17244 (Cel6A) and WO93/11249(Cel6B)).

The expression plasmids for cel6A and B (pCA6H and pC6H) were constructed by PCR addition of adequate restrictions sites (BamHI-XbaI) to the individual CDS's, and introduction into XbaI- BamHI cut pCaHj418 vector. The resulting DNA sequences from BamHI- XbaI are given in Figures 2 and 3, respectively (the translational initiation codon is underlined in each sequence).

Cel6B (& cel6A) variants with the exeption of larger deletions/inserts (>9bp) were constructed by application of the

Chameleon™ Double-stranded, site-directed Mutagenesis kit, from Stratagene. The following synthetic oligo-nucleotide were used as selection primer:

S/M GAATGACTTGGTTGACGCGTCACCAGTCAC, or

M/S GAATGACTTGGTTGAGTACTCACCAGTCAC.

S/M replaces the ScaI site in the beta-lactamase gene of the plasmid with a MluI site and M/S does the reverse. The later is used to introduce secondary mutations in variants generated by the first selection primer.

CA6H4 and 5 were made by SOE PCR utilizing the following primers:

CA6H4-F: 5' GGTGAGTGCGACGGCTGCGGTCTGGAGGCTGGCCAGTTT AATGAATATTTCATTCAGTTGCTGCG

CA6H4-R: 5' CGCAGCAACTGAATGAAATATTCATTAAACTGGCCAGCCTC CAGACCGCAGCCGTCGCACTCACC

CA6H5-F: 5' GGTGAGTGCGACGGCTGCATCGCCGGCGCTGGCCAGTTTA ATGAATATTTCATTCAGTTGCTGCG

CA6H5-R: 5' CGCAGCAACTGAATGAAATATTCATTAAACTGGCCAGCGCC GGCGATGCAGCCGTCGCACTCACC

TAKA-F: 5' CGACAACATCACATCAAGCTCTCC

TAKA-R: 5' CCCCATCCTTTAACTATAGCGAAATGG

With pCA6H as template (10 ng/100 ml), Pwo (Boehringer) based PCR reactions were performed, under standard conditions, as recommended by the manufactor, with the following primer pairs:

1: TAKA-F/CA6H4-R

2: TAKA-R/CA6H4-F

3: TAKA-F/CA6H5-R

4: TAKA-R/CA6H5-F

96°C, 2' - 4x(94 °C,30''- 50°C, 30''- 72°C, 45'') - 25x(94 °C,30''- 57°C, 30''- 72°C, 45'') -72°C, 7'- 4°C, hold

The resulting products, 1&3 1398 bp, 2&4 153 bp were purified via agarose gel electrophoresis and applied in two new PCR's with templates as listed about 0.1 pmol/100 ml each:

5: PCR1prod.+ PCR2prod

6: PCR3prod.+ PCR4prod

and TAKA-F/R as primers: 96°C, 2' - 4x(94 °C, 30''-72°C, 30''-72°C, 45'') - 20x(94 °C, 30''-57°C, 30''- 72°C, 45'') -72°C, 7'- 4°C, hold.

The resulting products of 1477 bp were purified via agarose gel elctrophoresis, subjected to BamH1-Xba1 restriction nuclease digestions and the resulting 1365 bp bands isolated as above and cloned into pCaHj418 Xba1 - BamH1 vector.

EXAMPLE 4

Trimming of binding cleft loops to increase activity

In order to alter *Humicola insolens* Cel6A to a *Humicola* endoglucanase type in order to create an enzyme having improved performance in colour clarification, mutations which reduce the length of one or more of the binding cleft encompassing loops was performed. The extent of the binding cleft encompassing loops can be determined either from the multiple sequence alignment or by solving the three dimensional X-ray structure of *Humicola insolens* Cel6A and perform the same analysis as described for *Humicola insolens* EGIV (Cel6B).

From the sequence alignment in fig. 1A/B the binding cleft loop regions of *Humicola insolens* Cel6A can be found as shown in Fig. 6.

The same analysis could be performed by solving the X-ray structure of *Humicola insolens* Cel6A catalytic core domain and performing the same analysis as described for the X-ray structure of *Humicola insolens* EG VI (Cel6B) catalytic core domain. In this case the result is a little different as shown in Fig. 7.

The four longer loops encompassing the binding cleft (residues Y86-N107, N219-D242, L272-P287 or W308-F331 using *Humicola insolens* Cel6B numbering) are in the numbering scheme of *Humicola insolens* Cel6A V173-N195, N307-D330, K360-G376 and W397-F435 (using *Humicola insolens* Cel6A numbering) when the multiple sequence alignment method is used and it is Y174-N195, N307-D330, K360-Y391 and W397-F435 F435 (using *Humicola insolens* Cel6A numbering) when the X-ray structure method is used.

<u>Constructions of loop trimming</u>:

In one example (A) the loop W397-F435 (using *Humicola insolens* Cel6A numbering) which is equivalent to the W308-F331 in

Humicola insolens Cel6B is mutagenized altering the sequence from

WVKPGGECDGTSDTTAARYDYHCGLEDALKPAPEAGQWF

to

WVKPGGECDGCGLEAGQF

(the underlined residues have been deleted)
thereby making the binding cleft more accessible and generating color care activity for the variant.

In another example (B) the same loop is shortened as in (A) and three extra mutations is introduced to alter the loop geometry (G420I+L421A+E422G in *Humicola insolens* Cel6A numbering):

WVKPGGECDGTSDTTAARYDYHCGLEDALKPAPEAGQWF

to

WVKPGGECDGC**IAG**AGQF

(A) and (B) were made by SOE PCR as described in example 3.

In a similar manner, the cel6A-type cellulases from the species *Fusarium oxysporum, Trichoderma reesei, Agaricus bispora, Acremonium cellulyticus, Phanerochaete chrysosporium, Penicillium purpurogenum* which are aligned in fig. 1A/B can be altered to a *Humicola* endoglucanase type enzyme (Cel6B-type).

EXAMPLE 5
Resistance to anionic surfactants in detergent.

As described it is possible to stabilize an enzyme against denaturation by anionic tensides by mutation/deletion of surface exposed residue(s) towards more negatively charged residue(s) i.e. removal of positively charged residue(s) and/or the introduction of negatively charged residue(s).

Resistance to anionic surfactants in detergent (A)

Variants of the present invention may show improved performance with respect to an altered sensitivity towards anionic surfactants (tensides). Anionic tensides are products frequently incorporated into detergent compositions. Unfolding of cellulases tested so far, is accompanied by a decay in the intrinsic fluorescence of the proteins. The intrinsic fluorescence derives from Trp side chains (and to a smaller extent Tyr side chains) and is sensitive to the hydrophobicity of the side chain environment. Unfolding leads to a more hydrophilic environment

as the side-chains become more exposed to solvent, and this quenches fluorescence.

Fluorescence is followed on a Perkin/Elmer™ LS50 luminescence spectrometer. In practice, the greatest change in fluorescence on unfolding is obtained by excitation at 280 nm and emission at 340 nm. Slit widths (which regulate the magnitude of the signal) are usually 5 nm for both emission and excitation at a protein concentration of 5 μg/ml. Fluorescence is measured in 2-ml quartz cuvettes thermostatted with a circulating water bath and stirred with a small magnet. The magnet-stirrer is built into the spectrometer.

Unfolding can be followed in real time using the available software. Rapid unfolding (going to completion within less than 5-10 minutes) is monitored in the TimeDrive option, in which the fluorescence is measured every few (2-5) seconds. For slower unfolding, four cuvettes can be measured at a time in the cuvette-holder using the Wavelength Program option, in which the fluorescence of each cuvette is measured every 30 seconds. In all cases, unfolding is initiated by adding a small volume (typically 50 μl) of concentrated enzyme solution to the thermostatted cuvette solution where mixing is complete within a few seconds due to the rapid rotation of the magnet.

Data are measured in the software program GraphPad Prism. Unfolding fits in all cases to a single-exponential function from which a single half-time of unfolding (or unfolding rate constant) can be obtained. Typical unfolding conditions are 50 mM HEPES pH 7, 0-500 ppm LAS/250 ppm LAS, 25°C. In both cases, the protein concentration is 5-10 μg/ml (the protein concentration is not crucial, as LAS is in excess).

Enzyme	$t_{\frac{1}{2}relative}$
Humicola insolens Cel6B	100%
Humicola insolens Cel6B/K20E	170%
Humicola insolens Cel6B/K103E	156%
Humicola insolens Cel6B/Q318E	436%

From this table it is seen that mutation of residues resulting in the removal of positively charged residue(s) and/or the

introduction of negatively charged residue(s) increase the resistance towards LAS.

Resistance to anionic surfactants in detergent (B)

The alteration of the surface electrostatics of an enzyme will influence the sensibility towards anionic tensides such as LAS (linear alkylbenzenesulfonate). Especially variants where positive charged residues have been removed and/or negatively charged residues have been introduced will increase the resistance towards LAS, whereas the opposite, i.e. the introduction of positively charged residues and/or the removal of negatively charged residues will lower the resistance towards LAS. The residues Arg (R), Lys (K) and His (H) are viewed as positively or potentially positively charged residue and the residues Asp (D), Glu (E) and Cys (C) if not included in a disulphide bridge are viewed as negatively or potentially negatively charged residues. Positions already containing one of these residues are the primary target for mutagenesis, secondary targets are positions which has one of these residues on an equivalent position in another cellulase, and third target are any surface exposed residue. In this experiment wild type *Humicola insolens* Cel6B cellulase are being compared to *Humicola insolens* Cel6B cellulase variants belonging to all three of the above groups, comparing the stability towards LAS in detergent.

Cellulase resistance to anionic surfactants was measured as activity on PASC (phosphoric acid swollen cellulose) in the presence of anionic surfactant vs. activity on PASC in the absence of anionic surfactant.

The reaction medium contained 5.0 g/l of a commercial regular powder detergent from the detergent manufacturer NOPA Denmark. The detergent was formulated without surfactants for this experiment and pH adjusted to pH 7.0. Further the reaction medium included 0.5 g/l PASC and was with or without 1 g/l LAS (linear alkylbenzenesulphonate), which is an anionic surfactant, and the reaction proceeded at the temperature 30°C for 30 minutes. Cellulase was dosed at 0.20 S-CEVU/l. After the 30 minutes of incubation the reaction was stopped with 2 N NaOH and the amount of reducing sugar ends determined through reduction of p-hydroxybenzoic acid hydrazide. The decrease in absorption of re-

duc d p-hydroxybenzoic acid hydrazide relates to the cellulas activity.

The type of mutation and the resistance towards LAS for variants with increased LAS resistance is summarized in the following table:

Variant	Relative LAS resistance [%]
Humicola insolens Cel6B	100
Humicola insolens Cel6B/S56D	122
Humicola insolens Cel6B/K103E	123
Humicola insolens Cel6B/Q138E	113

From this table it is seen that mutation of residues resulting in the removal of positively charged residue(s) and/or the introduction of negatively charged residue(s) increase the resistance towards LAS.

EXAMPLE 6

Improving stability towards anionic surfactants of any *Humicola*-like family 6 cellulase

In order to stabilize any *Humicola*-like family 6 cellulase towards anionic surfactants, residues on the surface of the molecule should be mutated towards a more negatively charged surface as described in the text resulting in the removal of positively charged residue(s) and/or introduction of negatively charged residue(s). The residues on the surface of the molecule can be detected from the multiple sequence alignment in the following way: Residues at a position in the sequence equivalent to residues on the surface of the *Humicola insolens* Cel6A X-ray structure are thought to most likely be on the surface of a given family 6 cellulase. In the case of an insertion the inserted residue(s) are considered as being on the surface of the molecule if one of the flanking residues of the insertion is considered as being on the surface.

To achieve improved performance of the enzyme in color clarification a linker and a CBD have to bee attached to the catalytic core domain. In the cases where the wild type enzyme does not include the linker region and/or the CBD these segments

can be included from another enzyme e.g. *Humicola insolens* Cel6B by standard techniques to achive a hybrid enzyme with the desired improved properties.

(A) *Neocallimastix patriciarum*

Taking the *Neocallimastix patriciarum* SPTREMBL entry q12646 as an example figure 8 shows the residues considered as being on the surface of the *Neocallimastix patriciarum* catalytic core domain.

Preferably potentially positively charged residues should be mutagenized to neutral or negatively charged residues. In the case of *Neocallimastix patriciarum* this results to (using the numbering scheme of *Humicola insolens* Cel6B): K4, K16, R27, K43, K45, K67, K72, R91, K113, R122, R125, K131, R156, H159, K160, H183, K195, K201, K212, R214, K249, H262, R293, R295, K310, R318e, R323c, H332, R340, R343.

More preferably the positions which hold an Arg: R27, R91, R122, R125, R156, R214, R293, R295, R318e, R323c, R340 or R343.

Or preferably positions which in other *Humicola*-like family 6 cellulases have been shown to improve stability towards anionic tensides.

(B) *Orpinomyces sp.* CelA

Taking the *Orpinomyces sp.* CelA SPTREMBL entry p78720 (residues 128-459) as an example figure 9 shows the residues considered as being on the surface of the *Orpinomyces sp.* CelA catalytic core domain.

Preferably potentially positively charged residues should be mutagenized to neutral or negatively charged residues. In the case of *Orpinomyces sp.* CelA this results to (using the numbering scheme of *Humicola insolens* Cel6B): K16, K26, K27, K38, K40, K43, K45, K72, K111, K113, K128, K131, R153, R156, H159, K160, K169, H174, K176, H183, K201, K212, R214, K245, H247, R252, K257, R260, K262, R269, K286, R293, K295, K310, R318e, R321 or H332.

More preferably the positions which hold an Arg: R153, R156, R214, R252, R260, R269, R293, R318e or R321.

Or preferably positions which in other *Humicola*-like family 6 cellulases have been shown to improve stability towards anionic tensides (surfactants).

(C) *Orpinomyces sp.* CelC

Taking the *Orpinomyces sp.* CelC SPTREMBL entry p78721 (residues 127-449) as an example figure 10 shows the residues considered as being on the surface of the *Orpinomyces sp.* CelA catalytic core domain.

Preferably potentially positively charged residues should be mutagenized to neutral or negatively charged residues. In the case of *Orpinomyces sp.* CelC this results to (using the numbering scheme of *Humicola insolens* Cel6B): K16, R27, K42, K43, R64, K72, R91, R131, H156, H159, K160, K169, K173, R176, H183, R195, R205, K212, R214, H247, R252, R257, R260, K262, R272, K286, R293, K310, R320 or H332.

More preferably the positions which hold an Arg: R27, R64, R91, R131, R176, R195, R205, R214, R252, R257, R260, R272, R293 or R320.

Or preferably positions which in other *Humicola*-like family 6 cellulases have been shown to improve stability towards anionic tensides (surfactants).

EXAMPLE 7

Alteration of pH activity profile

The pH activity profile of a cellulase is governed by the pH dependent behavior of specific titratable groups, typically the acidic residues in the active site. The pH profile can be altered by changing the electrostatic environment of these residues, either by substitution of residues involving charged or potentially charged groups such as Arg (R), Lys (K), Tyr (Y), His (H), Glu (E), Asp (D) or Cys (C) if not involved in a disulphide bridge or by changes in the surface accessibility of these specific titratable groups by mutation of these specific residues on the surface of the enzyme close to the proton donor as described above or by mutation of residues in the vicinity of the binding cleft as described herein, preferably by mutation(s) in the binding cleft within 5Å, more preferably 2.5Å, of the substrate, or preferably by mutations within 10Å, more preferably 5Å, from the active site (D139).

In this example *Humicola insolens* Cel6B cellulase and variants of *Humicola insolens* Cel6B cellulase involving substi-

tution of charged or potentially charged residues have been tested for activity towards PASC at pH 7 and pH 10, respectively.

In order to determine the pH optimum for cellulases we have selected organic buffers because it is common known that e.g. borate forms covalent complexes with mono- and oligo-saccharides and phosphate can precipitate with Ca-ions. In DATA FOR BIOCHEMICAL RESEARCH Third Edition OXFORD SCIENCE PUBLICATIONS page 223 to 241, suitable organic buffers has been found. In respect of their pKa values we decided to use Na-acetate in the range 4 - 5.5, MES at 6.0, MOPS in the range 6.5 - 7.5, Na-barbiturate 8.0 - 8.5 and glycine in the range 9.0 - 10.5.

Method:

The method is enzymatic degradation of carboxy-methyl-cellulose, at different pH's. Buffers are prepared in the range 4.0 to 10.5 with intervals of 0.5 pH unit. The analyze is based on formation of new reducing ends in carboxy-methyl-cellulose, these are visualized by reaction with PHBAH in strong alkaline environment, were they forms a yellow compound with absorption maximum at 410 nm.

Experimental Protocol:

Buffer preparation: 0.2 mol of each buffer substance is weighed out and dissolved in 1 liter of Milli Q water. 250 ml 0.2M buffer solution and 200 ml Milli Q water is mixed. The pH are measured using Radiometer PHM92 labmeter calibrated using standard buffer solutions from Radiometer. The pH of the buffers are adjusted to actual pH using 4M NaOH or 4M HCl and adjusted to total 500 ml with water. When adjusting Na-barbiturate to pH 8.0 there might be some precipitation, this can be re-dissolved by heating to 50°C.

Acetic acid 100% 0.2 mol = 12.01 g.
MES 0.2 mol = 39.04 g.
MOPS 0.2 mol = 41.86 g.
Na-barbiturate 0.2 mol = 41.24 g.
Glycine 0.2mol = 15.01 g.

Buffers: as disclosed in WO 98/12307, page 89.

The actual pH is measured in a series treated as the main values, but without stop reagent, pH is measured after 20 min. incubation at 40 °C.

Substrate Preparation:

2.0 g CMC , in 250 ml conic glass flask with a magnet rod, is moistened with 2.5 ml. 96% ethanol, 100 ml. Milli Q water is added and then boiled to transparency on a heating magnetic stirrer. Approximately 2 min. boiling. Cooled to room temperature on magnetic stirrer.

Stop Reagent:

1.5 g PHBAH and 5 g K-Na-tartrate dissolved in 2% NaOH.

Procedure:

There are made 3 main values and 2 blank value using 5 ml glass test tubes. (1 main value for pH determination)

	Main values	Blank value
Buffer	1.0 ml.	1.0 ml.
Substrate CMC	0.75 ml.	0.75 ml.
Mix	5 sec.	5 sec.
Preheat	10 min./40°C.	-
Enzyme	0.25 ml.	-
Mix	5 sec.	-
Incubation	20 min./ 40°C.	room temp.
PHBAH-reagent	1 ml.	1 ml.
Mix	5 sec.	-
Enzyme	-	0.25 ml.
Mix	-	5 sec.

Mixing on a Heidolph REAX 2000 mixer with permanent mix and maximum speed (9). No stirring during incubation on water bath with temperature control. Immediately after adding PHBAH-reagent and mixing the samples are boiled 10 min. Cooled in cold tap water for 5 min. Absorbance read at 410 nm.

Determination of Activity

The absorbance at 410 nm from the 2 Main values are added and divided by 2 and the 2 Blank values are added and divided by 2, the 2 mean values are subtracted. The percentages are calculated by using the highest value as 100%.

The measured pH is plotted against the relative activity. Buffer reagents as disclosed in WO98/12307, page 90.

Cellulase resistance to anionic surfactants was measured as activity on PASC (phosphoric acid swollen cellulose) at neutral pH (pH 7.0) vs. activity on PASC at alkaline pH (pH 10.0). The reaction medium contained 5.0 g/l of a commercial regular powder detergent from the detergent manufacturer NOPA Denmark. The pH was adjusted to pH 7.0 and pH 10.0, respectively. Further the reaction medium included 0.5 g/l PASC, and the reaction proceeded at the temperature 30°C for 30 minutes. Cellulase was dosed at 0.20 S-CEVU/l. After the 30 minutes of incubation the reaction was stopped with 2 N NaOH and the amount of reducing sugar ends determined through reduction of p-hydroxybenzoic acid hydrazide. The decrease in absorption of reduced p-hydroxybenzoic acid hydrazide relates to the cellulase activity.

The results are presented below, the activity at pH 10 relative to pH 7 is compared to that of wild type *Humicola insolens* Cel6B cellulase.

Variant	PASC activity pH10/pH7 relative to wild type [%]
Humicola insolens	100
Humicola insolens/N183H	400
Humicola insolens/A182G,N183H	250
Humicola insolens/A182G	140

From the above table it is seen that the relative alkaline activity can be increased by creating variants involving potentially charged residues which are mutated towards a more negatively charged residue and/or by altering residues not more than 5Å from the residues in the binding cleft.

EXAMPLE 8

Variants with improved catalytic properties

The following site directed variants of *Humicola insolens* Cel6B (EG VI) endoglucanase were prepared as described above: K20E, K103Q, K103E, S94D, A95G.

The specific activity on CMC of the variants and the wild-type *H. insolens* endoglucanase were measured in the ECU (endo-

cellulase unit) assay (cf. above under "Cellulolytic Activity") with the following results:

Wild-type	100%
K20E	109%
K103Q	120%
K103E	115%
S94D	180%
A95G	116%

All the tested variants have improved specific activity.

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APPENDIX 1

The structural coordinated of the three-dimensional structure of the *Humicola insolens* Cel6B catalytic core domain.

The structural coordinates of the *Humicola insolens* Cel6B catalytic core domain as determined by X-ray crystallography. The format of the coordinates is the conventional *Brookhaven Protein Data Bank* (PDB) format:

ATOM	1	N	GLY	A	3	-1.219	43.542	30.269	1.00	38.26	N
ATOM	2	CA	GLY	A	3	-2.014	43.426	29.045	1.00	37.85	C
ATOM	3	C	GLY	A	3	-1.696	42.106	28.320	1.00	30.25	C
ATOM	4	O	GLY	A	3	-0.625	41.520	28.474	1.00	29.98	O
ATOM	5	N	ASN	A	4	-2.694	41.653	27.583	1.00	26.24	N
ATOM	6	CA	ASN	A	4	-2.522	40.422	26.779	1.00	20.56	C
ATOM	7	C	ASN	A	4	-1.763	40.898	25.563	1.00	18.81	C
ATOM	8	O	ASN	A	4	-2.111	41.817	24.819	1.00	18.03	O
ATOM	9	CB	ASN	A	4	-3.894	39.853	26.486	1.00	25.75	C
ATOM	10	CG	ASN	A	4	-3.998	38.898	25.313	1.00	25.58	C
ATOM	11	OD1	ASN	A	4	-2.969	38.503	24.764	1.00	18.12	O
ATOM	12	ND2	ASN	A	4	-5.222	38.545	24.933	1.00	25.83	N
ATOM	13	N	PRO	A	5	-0.620	40.287	25.287	1.00	18.82	N
ATOM	14	CA	PRO	A	5	0.217	40.707	24.170	1.00	21.77	C
ATOM	15	C	PRO	A	5	-0.379	40.490	22.795	1.00	19.14	C
ATOM	16	O	PRO	A	5	0.116	41.014	21.786	1.00	20.12	O
ATOM	17	CB	PRO	A	5	1.551	39.962	24.330	1.00	22.32	C
ATOM	18	CG	PRO	A	5	1.247	38.911	25.348	1.00	27.04	C
ATOM	19	CD	PRO	A	5	-0.027	39.231	26.096	1.00	23.52	C
ATOM	20	N	PHE	A	6	-1.420	39.660	22.675	1.00	20.14	N
ATOM	21	CA	PHE	A	6	-2.025	39.349	21.392	1.00	18.69	C
ATOM	22	C	PHE	A	6	-3.168	40.333	21.066	1.00	21.14	C
ATOM	23	O	PHE	A	6	-3.659	40.333	19.958	1.00	19.59	O
ATOM	24	CB	PHE	A	6	-2.571	37.924	21.376	1.00	17.61	C
ATOM	25	CG	PHE	A	6	-1.492	36.869	21.367	1.00	12.55	C
ATOM	26	CD1	PHE	A	6	-0.937	36.390	22.554	1.00	17.74	C
ATOM	27	CD2	PHE	A	6	-1.033	36.378	20.163	1.00	19.19	C
ATOM	28	CE1	PHE	A	6	0.045	35.415	22.547	1.00	19.08	C
ATOM	29	CE2	PHE	A	6	-0.017	35.442	20.127	1.00	13.64	C
ATOM	30	CZ	PHE	A	6	0.496	34.966	21.322	1.00	17.40	C
ATOM	31	N	SER	A	7	-3.625	41.041	22.085	1.00	24.32	N
ATOM	32	CA	SER	A	7	-4.696	42.029	21.934	1.00	25.88	C
ATOM	33	C	SER	A	7	-4.451	42.995	20.789	1.00	20.85	C
ATOM	34	O	SER	A	7	-3.459	43.730	20.688	1.00	24.54	O
ATOM	35	CB	SER	A	7	-4.820	42.841	23.237	1.00	26.78	C
ATOM	36	OG	SER	A	7	-6.172	43.198	23.483	1.00	41.47	O
ATOM	37	N	GLY	A	8	-5.371	42.997	19.824	1.00	26.40	N
ATOM	38	CA	GLY	A	8	-5.340	43.814	18.652	1.00	24.54	C
ATOM	39	C	GLY	A	8	-4.269	43.464	17.635	1.00	26.47	C
ATOM	40	O	GLY	A	8	-4.064	44.173	16.658	1.00	27.08	O
ATOM	41	N	ARG	A	9	-3.612	42.315	17.808	1.00	21.06	N
ATOM	42	CA	ARG	A	9	-2.572	41.872	16.890	1.00	22.18	C
ATOM	43	C	ARG	A	9	-3.019	40.660	16.083	1.00	18.93	C
ATOM	44	O	ARG	A	9	-4.011	40.028	16.400	1.00	19.47	O
ATOM	45	CB	ARG	A	9	-1.284	41.600	17.687	1.00	23.74	C

ATOM	46	CG	ARG	A	9	-0.655	42.881	18.192	1.00	23.86	C
ATOM	47	CD	ARG	A	9	0.697	42.725	18.882	1.00	27.92	C
ATOM	48	NE	ARG	A	9	1.213	44.064	19.199	1.00	27.01	N
ATOM	49	CZ	ARG	A	9	1.488	44.533	20.404	1.00	37.53	C
ATOM	50	NH1	ARG	A	9	1.321	43.763	21.468	1.00	36.85	N
ATOM	51	NH2	ARG	A	9	1.946	45.781	20.503	1.00	32.23	N
ATOM	52	N	THR	A	10	-2.288	40.327	15.027	1.00	24.28	N
ATOM	53	CA	THR	A	10	-2.564	39.132	14.227	1.00	19.42	C
ATOM	54	C	THR	A	10	-1.354	38.193	14.346	1.00	24.81	C
ATOM	55	O	THR	A	10	-0.251	38.690	14.163	1.00	20.25	O
ATOM	56	CB	THR	A	10	-2.737	39.467	12.744	1.00	26.72	C
ATOM	57	OG1	THR	A	10	-1.768	40.459	12.367	1.00	25.66	O
ATOM	58	CG2	THR	A	10	-4.140	40.042	12.529	1.00	28.94	C
ATOM	59	N	LEU	A	11	-1.572	36.927	14.675	1.00	19.06	N
ATOM	60	CA	LEU	A	11	-0.435	35.982	14.697	1.00	19.38	C
ATOM	61	C	LEU	A	11	0.111	35.848	13.287	1.00	14.73	C
ATOM	62	O	LEU	A	11	-0.555	35.657	12.279	1.00	15.07	O
ATOM	63	CB	LEU	A	11	-0.920	34.622	15.217	1.00	16.36	C
ATOM	64	CG	LEU	A	11	0.196	33.575	15.358	1.00	17.32	C
ATOM	65	CD1	LEU	A	11	1.351	33.982	16.269	1.00	18.77	C
ATOM	66	CD2	LEU	A	11	-0.436	32.245	15.788	1.00	16.40	C
ATOM	67	N	LEU	A	12	1.444	36.024	13.141	1.00	16.75	N
ATOM	68	CA	LEU	A	12	2.060	36.058	11.830	1.00	13.59	C
ATOM	69	C	LEU	A	12	2.020	34.739	11.061	1.00	18.27	C
ATOM	70	O	LEU	A	12	2.255	33.691	11.661	1.00	16.05	O
ATOM	71	CB	LEU	A	12	3.505	36.577	11.950	1.00	14.84	C
ATOM	72	CG	LEU	A	12	4.283	36.764	10.640	1.00	19.82	C
ATOM	73	CD1	LEU	A	12	3.878	38.020	9.888	1.00	16.23	C
ATOM	74	CD2	LEU	A	12	5.779	36.782	10.927	1.00	21.50	C
ATOM	75	N	VAL	A	13	1.740	34.836	9.760	1.00	18.01	N
ATOM	76	CA	VAL	A	13	1.775	33.596	8.958	1.00	15.29	C
ATOM	77	C	VAL	A	13	3.197	33.038	8.957	1.00	17.10	C
ATOM	78	O	VAL	A	13	4.189	33.771	8.935	1.00	20.59	O
ATOM	79	CB	VAL	A	13	1.307	33.883	7.521	1.00	16.36	C
ATOM	80	CG1	VAL	A	13	1.842	32.878	6.516	1.00	25.91	C
ATOM	81	CG2	VAL	A	13	-0.229	33.978	7.423	1.00	20.83	C
ATOM	82	N	ASN	A	14	3.330	31.716	8.968	1.00	15.04	N
ATOM	83	CA	ASN	A	14	4.621	31.037	8.860	1.00	17.17	C
ATOM	84	C	ASN	A	14	4.809	30.806	7.358	1.00	19.93	C
ATOM	85	O	ASN	A	14	4.099	30.022	6.721	1.00	15.61	O
ATOM	86	CB	ASN	A	14	4.611	29.761	9.683	1.00	14.05	C
ATOM	87	CG	ASN	A	14	5.850	28.897	9.544	1.00	15.07	C
ATOM	88	OD1	ASN	A	14	6.505	28.972	8.533	1.00	18.33	O
ATOM	89	ND2	ASN	A	14	6.119	28.082	10.587	1.00	19.81	N
ATOM	90	N	SER	A	15	5.772	31.480	6.722	1.00	16.93	N
ATOM	91	CA	SER	A	15	5.972	31.375	5.291	1.00	19.54	C
ATOM	92	C	SER	A	15	6.450	30.003	4.841	1.00	19.95	C
ATOM	93	O	SER	A	15	6.081	29.590	3.731	1.00	19.84	O
ATOM	94	CB	SER	A	15	6.925	32.465	4.794	1.00	23.25	C
ATOM	95	OG	SER	A	15	8.109	32.414	5.573	1.00	23.52	O
ATOM	96	N	ASP	A	16	7.229	29.316	5.679	1.00	20.02	N
ATOM	97	CA	ASP	A	16	7.678	27.986	5.233	1.00	18.50	C
ATOM	98	C	ASP	A	16	6.490	27.032	5.160	1.00	19.89	C
ATOM	99	O	ASP	A	16	6.297	26.266	4.196	1.00	20.29	O
ATOM	100	CB	ASP	A	16	8.749	27.479	6.183	1.00	21.86	C
ATOM	101	CG	ASP	A	16	9.262	26.115	5.708	1.00	36.14	C
ATOM	102	OD1	ASP	A	16	9.486	25.883	4.491	1.00	38.17	O
ATOM	103	OD2	ASP	A	16	9.383	25.267	6.609	1.00	36.83	O
ATOM	104	N	TYR	A	17	5.686	27.053	6.241	1.00	18.14	N

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ATOM    105  CA  TYR A  17       4.487  26.234   6.264  1.00 16.72           C
ATOM    106  C   TYR A  17       3.546  26.568   5.133  1.00 15.19           C
ATOM    107  O   TYR A  17       2.949  25.740   4.432  1.00 16.05           O
ATOM    108  CB  TYR A  17       3.789  26.452   7.608  1.00 17.07           C
ATOM    109  CG  TYR A  17       2.526  25.697   7.890  1.00 13.43           C
ATOM    110  CD1 TYR A  17       2.341  24.363   7.550  1.00 13.11           C
ATOM    111  CD2 TYR A  17       1.474  26.357   8.535  1.00 16.87           C
ATOM    112  CE1 TYR A  17       1.155  23.717   7.871  1.00 13.74           C
ATOM    113  CE2 TYR A  17       0.283  25.717   8.850  1.00 16.10           C
ATOM    114  CZ  TYR A  17       0.148  24.400   8.508  1.00 13.11           C
ATOM    115  OH  TYR A  17      -1.005  23.712   8.810  1.00 14.15           O
ATOM    116  N   SER A  18       3.263  27.851   4.904  1.00 15.39           N
ATOM    117  CA  SER A  18       2.428  28.267   3.776  1.00 18.04           C
ATOM    118  C   SER A  18       2.941  27.767   2.434  1.00 17.83           C
ATOM    119  O   SER A  18       2.158  27.327   1.586  1.00 19.59           O
ATOM    120  CB  SER A  18       2.354  29.805   3.817  1.00 21.27           C
ATOM    121  OG ASER A  18       1.253  30.217   4.608  0.50 27.39           O
ATOM    122  OG BSER A  18       1.514  30.236   2.772  0.50 17.06           O
ATOM    123  N   SER A  19       4.260  27.733   2.243  1.00 17.26           N
ATOM    124  CA  SER A  19       4.815  27.191   1.004  1.00 17.67           C
ATOM    125  C   SER A  19       4.528  25.702   0.844  1.00 17.75           C
ATOM    126  O   SER A  19       4.127  25.224  -0.225  1.00 18.25           O
ATOM    127  CB  SER A  19       6.327  27.476   0.932  1.00 20.98           C
ATOM    128  OG ASER A  19       6.550  28.864   0.860  0.60 16.86           O
ATOM    129  OG BSER A  19       6.775  27.266  -0.395  0.40 20.68           O
ATOM    130  N   LYS A  20       4.695  24.963   1.949  1.00 17.13           N
ATOM    131  CA  LYS A  20       4.459  23.529   1.922  1.00 13.44           C
ATOM    132  C   LYS A  20       2.999  23.195   1.626  1.00 17.29           C
ATOM    133  O   LYS A  20       2.697  22.239   0.907  1.00 16.89           O
ATOM    134  CB  LYS A  20       4.869  22.910   3.261  1.00 17.94           C
ATOM    135  CG  LYS A  20       6.366  23.122   3.543  1.00 24.75           C
ATOM    136  CD  LYS A  20       6.660  22.371   4.825  1.00 22.80           C
ATOM    137  CE  LYS A  20       7.852  22.839   5.589  1.00 28.68           C
ATOM    138  NZ  LYS A  20       8.141  21.933   6.735  1.00 22.43           N
ATOM    139  N   LEU A  21       2.077  24.008   2.094  1.00 17.11           N
ATOM    140  CA  LEU A  21       0.653  23.842   1.855  1.00 13.52           C
ATOM    141  C   LEU A  21       0.270  24.012   0.389  1.00 17.88           C
ATOM    142  O   LEU A  21      -0.817  23.570   0.016  1.00 16.70           O
ATOM    143  CB  LEU A  21      -0.161  24.861   2.673  1.00 15.72           C
ATOM    144  CG  LEU A  21      -0.303  24.401   4.117  1.00 17.14           C
ATOM    145  CD1 LEU A  21      -0.813  25.536   5.018  1.00 19.64           C
ATOM    146  CD2 LEU A  21      -1.222  23.189   4.269  1.00 16.96           C
ATOM    147  N   ASP A  22       1.128  24.695  -0.366  1.00 18.31           N
ATOM    148  CA  ASP A  22       0.822  24.788  -1.808  1.00 17.60           C
ATOM    149  C   ASP A  22       0.638  23.406  -2.411  1.00 20.83           C
ATOM    150  O   ASP A  22      -0.254  23.185  -3.245  1.00 20.39           O
ATOM    151  CB  ASP A  22       1.881  25.579  -2.571  1.00 17.76           C
ATOM    152  CG  ASP A  22       1.220  26.464  -3.611  1.00 28.60           C
ATOM    153  OD1 ASP A  22       0.380  27.281  -3.181  1.00 23.59           O
ATOM    154  OD2 ASP A  22       1.538  26.321  -4.821  1.00 24.61           O
ATOM    155  N   GLN A  23       1.421  22.406  -1.967  1.00 18.04           N
ATOM    156  CA  GLN A  23       1.235  21.045  -2.460  1.00 19.08           C
ATOM    157  C   GLN A  23      -0.185  20.580  -2.188  1.00 21.56           C
ATOM    158  O   GLN A  23      -0.830  19.948  -3.036  1.00 22.98           O
ATOM    159  CB  GLN A  23       2.218  20.086  -1.768  1.00 19.16           C
ATOM    160  CG  GLN A  23       2.036  18.643  -2.223  1.00 25.29           C
ATOM    161  CD  GLN A  23       3.155  17.731  -1.760  1.00 30.48           C
ATOM    162  OE1 GLN A  23       3.144  16.538  -2.090  1.00 28.64           O
ATOM    163  NE2 GLN A  23       4.122  18.234  -1.013  1.00 17.97           N
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ATOM    164  N   THR A  24      -0.712  20.919  -0.992  1.00 17.27           N
ATOM    165  CA  THR A  24      -2.063  20.490  -0.634  1.00 17.10           C
ATOM    166  C   THR A  24      -3.098  21.160  -1.512  1.00 20.53           C
ATOM    167  O   THR A  24      -4.054  20.548  -1.974  1.00 20.84           O
ATOM    168  CB  THR A  24      -2.364  20.775   0.866  1.00 12.75           C
ATOM    169  OG1 THR A  24      -1.188  20.411   1.618  1.00 18.44           O
ATOM    170  CG2 THR A  24      -3.525  19.954   1.375  1.00 16.82           C
ATOM    171  N   ARG A  25      -2.957  22.462  -1.681  1.00 21.00           N
ATOM    172  CA  ARG A  25      -3.821  23.238  -2.549  1.00 17.91           C
ATOM    173  C   ARG A  25      -3.739  22.679  -3.965  1.00 19.93           C
ATOM    174  O   ARG A  25      -4.831  22.459  -4.486  1.00 24.01           O
ATOM    175  CB  ARG A  25      -3.388  24.704  -2.613  1.00 21.80           C
ATOM    176  CG  ARG A  25      -4.578  25.612  -2.940  1.00 27.75           C
ATOM    177  CD  ARG A  25      -3.977  27.048  -3.098  1.00 31.43           C
ATOM    178  NE  ARG A  25      -3.193  26.903  -4.331  1.00 36.58           N
ATOM    179  CZ  ARG A  25      -3.849  26.988  -5.499  1.00 38.46           C
ATOM    180  NH1 ARG A  25      -5.138  27.272  -5.631  1.00 41.76           N
ATOM    181  NH2 ARG A  25      -3.095  26.750  -6.543  1.00 22.34           N
ATOM    182  N   GLN A  26      -2.539  22.412  -4.480  1.00 18.69           N
ATOM    183  CA  GLN A  26      -2.482  21.757  -5.798  1.00 22.07           C
ATOM    184  C   GLN A  26      -3.191  20.412  -5.836  1.00 26.43           C
ATOM    185  O   GLN A  26      -3.894  20.096  -6.817  1.00 24.10           O
ATOM    186  CB  GLN A  26      -0.997  21.539  -6.162  1.00 22.74           C
ATOM    187  CG  GLN A  26      -0.280  22.867  -6.444  1.00 21.81           C
ATOM    188  CD  GLN A  26       1.223  22.710  -6.460  1.00 26.15           C
ATOM    189  OE1 GLN A  26       2.014  23.650  -6.360  1.00 29.54           O
ATOM    190  NE2 GLN A  26       1.731  21.487  -6.570  1.00 28.77           N
ATOM    191  N   ALA A  27      -3.069  19.553  -4.823  1.00 22.76           N
ATOM    192  CA  ALA A  27      -3.702  18.238  -4.801  1.00 22.86           C
ATOM    193  C   ALA A  27      -5.214  18.331  -4.878  1.00 26.56           C
ATOM    194  O   ALA A  27      -5.876  17.654  -5.683  1.00 29.72           O
ATOM    195  CB  ALA A  27      -3.266  17.435  -3.575  1.00 21.10           C
ATOM    196  N   PHE A  28      -5.822  19.221  -4.098  1.00 24.85           N
ATOM    197  CA  PHE A  28      -7.262  19.417  -4.131  1.00 23.17           C
ATOM    198  C   PHE A  28      -7.673  19.939  -5.510  1.00 24.62           C
ATOM    199  O   PHE A  28      -8.581  19.365  -6.109  1.00 31.47           O
ATOM    200  CB  PHE A  28      -7.720  20.401  -3.055  1.00 17.75           C
ATOM    201  CG  PHE A  28      -7.884  19.772  -1.700  1.00 20.87           C
ATOM    202  CD1 PHE A  28      -8.654  18.639  -1.493  1.00 18.88           C
ATOM    203  CD2 PHE A  28      -7.183  20.333  -0.634  1.00 17.62           C
ATOM    204  CE1 PHE A  28      -8.766  18.080  -0.228  1.00 23.06           C
ATOM    205  CE2 PHE A  28      -7.315  19.775   0.637  1.00 17.25           C
ATOM    206  CZ  PHE A  28      -8.091  18.678   0.843  1.00 19.95           C
ATOM    207  N   LEU A  29      -6.970  20.945  -6.032  1.00 23.80           N
ATOM    208  CA  LEU A  29      -7.312  21.458  -7.359  1.00 32.14           C
ATOM    209  C   LEU A  29      -7.335  20.339  -8.402  1.00 35.33           C
ATOM    210  O   LEU A  29      -8.298  20.213  -9.177  1.00 35.15           O
ATOM    211  CB  LEU A  29      -6.325  22.512  -7.803  1.00 29.77           C
ATOM    212  CG  LEU A  29      -6.540  23.986  -7.615  1.00 35.01           C
ATOM    213  CD1 LEU A  29      -5.522  24.766  -8.416  1.00 34.32           C
ATOM    214  CD2 LEU A  29      -7.957  24.417  -7.890  1.00 39.08           C
ATOM    215  N   SER A  30      -6.344  19.464  -8.396  1.00 34.71           N
ATOM    216  CA  SER A  30      -6.204  18.354  -9.322  1.00 37.80           C
ATOM    217  C   SER A  30      -7.277  17.288  -9.316  1.00 38.86           C
ATOM    218  O   SER A  30      -7.306  16.359 -10.139  1.00 38.27           O
ATOM    219  CB  SER A  30      -4.825  17.723  -9.056  1.00 38.75           C
ATOM    220  OG ASER A  30      -3.831  18.716  -9.316  0.50 38.25           O
ATOM    221  OG BSER A  30      -4.948  16.650  -8.135  0.50 44.07           O
ATOM    222  N   ARG A  31      -8.204  17.328  -8.380  1.00 35.46           N
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ATOM	223	CA	ARG	A	31	-9.349	16.448	-8.287	1.00	32.92	C
ATOM	224	C	ARG	A	31	-10.619	17.277	-8.477	1.00	34.41	C
ATOM	225	O	ARG	A	31	-11.715	16.814	-8.172	1.00	36.73	O
ATOM	226	CB	ARG	A	31	-9.378	15.675	-6.979	1.00	37.41	C
ATOM	227	CG	ARG	A	31	-8.085	14.880	-6.791	1.00	30.23	C
ATOM	228	CD	ARG	A	31	-8.224	13.944	-5.620	1.00	38.62	C
ATOM	229	NE	ARG	A	31	-8.688	14.611	-4.394	1.00	36.87	N
ATOM	230	CZ	ARG	A	31	-7.839	14.794	-3.375	1.00	38.36	C
ATOM	231	NH1	ARG	A	31	-6.572	14.397	-3.497	1.00	24.37	N
ATOM	232	NH2	ARG	A	31	-8.280	15.378	-2.275	1.00	39.97	N
ATOM	233	N	GLY	A	32	-10.453	18.524	-8.901	1.00	30.79	N
ATOM	234	CA	GLY	A	32	-11.568	19.435	-9.124	1.00	32.88	C
ATOM	235	C	GLY	A	32	-12.219	19.961	-7.851	1.00	34.01	C
ATOM	236	O	GLY	A	32	-13.269	20.611	-7.881	1.00	29.91	O
ATOM	237	N	ASP	A	33	-11.555	19.733	-6.717	1.00	28.54	N
ATOM	238	CA	ASP	A	33	-12.087	20.173	-5.436	1.00	21.21	C
ATOM	239	C	ASP	A	33	-11.644	21.598	-5.118	1.00	28.79	C
ATOM	240	O	ASP	A	33	-10.639	21.863	-4.449	1.00	27.97	O
ATOM	241	CB	ASP	A	33	-11.705	19.175	-4.360	1.00	21.50	C
ATOM	242	CG	ASP	A	33	-12.294	19.460	-3.007	1.00	20.79	C
ATOM	243	OD1	ASP	A	33	-13.016	20.472	-2.838	1.00	23.24	O
ATOM	244	OD2	ASP	A	33	-12.052	18.642	-2.085	1.00	23.15	O
ATOM	245	N	GLN	A	34	-12.472	22.543	-5.591	1.00	25.22	N
ATOM	246	CA	GLN	A	34	-12.204	23.959	-5.402	1.00	22.75	C
ATOM	247	C	GLN	A	34	-12.474	24.393	-3.962	1.00	22.82	C
ATOM	248	O	GLN	A	34	-11.800	25.313	-3.483	1.00	26.92	O
ATOM	249	CB	GLN	A	34	-13.126	24.830	-6.265	1.00	31.62	C
ATOM	250	CG	GLN	A	34	-12.464	25.374	-7.505	1.00	39.47	C
ATOM	251	CD	GLN	A	34	-11.961	24.251	-8.392	1.00	45.04	C
ATOM	252	OE1	GLN	A	34	-10.834	24.245	-8.874	1.00	50.64	O
ATOM	253	NE2	GLN	A	34	-12.826	23.258	-8.600	1.00	52.85	N
ATOM	254	N	THR	A	35	-13.484	23.784	-3.368	1.00	20.80	N
ATOM	255	CA	THR	A	35	-13.900	24.112	-2.012	1.00	21.60	C
ATOM	256	C	THR	A	35	-12.757	23.884	-1.026	1.00	18.34	C
ATOM	257	O	THR	A	35	-12.439	24.766	-0.221	1.00	20.03	O
ATOM	258	CB	THR	A	35	-15.137	23.325	-1.574	1.00	27.01	C
ATOM	259	OG1	THR	A	35	-16.266	23.811	-2.338	1.00	28.82	O
ATOM	260	CG2	THR	A	35	-15.442	23.548	-0.100	1.00	27.13	C
ATOM	261	N	ASN	A	36	-12.139	22.715	-1.098	1.00	20.66	N
ATOM	262	CA	ASN	A	36	-10.988	22.500	-0.189	1.00	15.84	C
ATOM	263	C	ASN	A	36	-9.741	23.202	-0.662	1.00	21.68	C
ATOM	264	O	ASN	A	36	-8.901	23.559	0.199	1.00	20.93	O
ATOM	265	CB	ASN	A	36	-10.797	21.004	0.050	1.00	20.04	C
ATOM	266	CG	ASN	A	36	-11.785	20.400	0.999	1.00	21.52	C
ATOM	267	OD1	ASN	A	36	-11.967	20.808	2.153	1.00	20.71	O
ATOM	268	ND2	ASN	A	36	-12.466	19.303	0.606	1.00	21.89	N
ATOM	269	N	ALA	A	37	-9.535	23.468	-1.947	1.00	19.31	N
ATOM	270	CA	ALA	A	37	-8.366	24.216	-2.399	1.00	16.22	C
ATOM	271	C	ALA	A	37	-8.414	25.628	-1.806	1.00	22.25	C
ATOM	272	O	ALA	A	37	-7.410	26.175	-1.365	1.00	20.26	O
ATOM	273	CB	ALA	A	37	-8.347	24.311	-3.926	1.00	22.22	C
ATOM	274	N	ALA	A	38	-9.617	26.185	-1.751	1.00	19.54	N
ATOM	275	CA	ALA	A	38	-9.855	27.521	-1.216	1.00	16.76	C
ATOM	276	C	ALA	A	38	-9.602	27.541	0.295	1.00	21.41	C
ATOM	277	O	ALA	A	38	-9.085	28.533	0.810	1.00	20.71	O
ATOM	278	CB	ALA	A	38	-11.300	27.921	-1.500	1.00	18.76	C
ATOM	279	N	LYS	A	39	-9.984	26.451	0.954	1.00	18.20	N
ATOM	280	CA	LYS	A	39	-9.697	26.347	2.402	1.00	16.71	C
ATOM	281	C	LYS	A	39	-8.176	26.312	2.607	1.00	18.03	C

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ATOM    282  O   LYS A  39      -7.736  26.952   3.590  1.00 16.49           O
ATOM    283  CB  LYS A  39     -10.373  25.055   2.871  1.00 15.79           C
ATOM    284  CG  LYS A  39     -11.841  25.247   3.160  1.00 15.84           C
ATOM    285  CD  LYS A  39     -12.685  23.997   3.177  1.00 24.79           C
ATOM    286  CE  LYS A  39     -12.603  23.222   4.473  1.00 23.47           C
ATOM    287  NZ  LYS A  39     -13.371  21.928   4.356  1.00 25.57           N
ATOM    288  N   VAL A  40      -7.425  25.584   1.796  1.00 18.40           N
ATOM    289  CA  VAL A  40      -5.964  25.612   1.920  1.00 16.71           C
ATOM    290  C   VAL A  40      -5.436  27.032   1.739  1.00 18.50           C
ATOM    291  O   VAL A  40      -4.613  27.534   2.522  1.00 17.77           O
ATOM    292  CB  VAL A  40      -5.271  24.618   0.962  1.00 13.77           C
ATOM    293  CG1 VAL A  40      -3.753  24.733   1.145  1.00 18.12           C
ATOM    294  CG2 VAL A  40      -5.711  23.177   1.245  1.00 17.94           C
ATOM    295  N   LYS A  41      -5.896  27.745   0.679  1.00 18.92           N
ATOM    296  CA  LYS A  41      -5.418  29.127   0.476  1.00 22.78           C
ATOM    297  C   LYS A  41      -5.760  30.039   1.647  1.00 21.74           C
ATOM    298  O   LYS A  41      -4.993  30.940   1.994  1.00 18.77           O
ATOM    299  CB  LYS A  41      -5.956  29.684  -0.855  1.00 23.98           C
ATOM    300  CG  LYS A  41      -5.119  30.858  -1.369  1.00 21.98           C
ATOM    301  CD  LYS A  41      -5.158  30.897  -2.897  1.00 32.46           C
ATOM    302  CE  LYS A  41      -5.617  32.247  -3.405  1.00 40.42           C
ATOM    303  NZ  LYS A  41      -4.582  33.307  -3.303  1.00 45.05           N
ATOM    304  N   TYR A  42      -6.859  29.813   2.333  1.00 17.12           N
ATOM    305  CA  TYR A  42      -7.288  30.552   3.516  1.00 17.44           C
ATOM    306  C   TYR A  42      -6.200  30.342   4.583  1.00 17.60           C
ATOM    307  O   TYR A  42      -5.664  31.327   5.062  1.00 18.30           O
ATOM    308  CB  TYR A  42      -8.641  30.140   4.083  1.00 18.45           C
ATOM    309  CG  TYR A  42      -9.121  30.848   5.331  1.00 19.03           C
ATOM    310  CD1 TYR A  42      -8.662  30.530   6.587  1.00 17.73           C
ATOM    311  CD2 TYR A  42     -10.071  31.867   5.243  1.00 21.04           C
ATOM    312  CE1 TYR A  42      -9.098  31.175   7.732  1.00 18.75           C
ATOM    313  CE2 TYR A  42     -10.531  32.515   6.385  1.00 28.47           C
ATOM    314  CZ  TYR A  42     -10.044  32.170   7.623  1.00 28.03           C
ATOM    315  OH  TYR A  42     -10.504  32.830   8.743  1.00 25.85           O
ATOM    316  N   VAL A  43      -5.877  29.067   4.811  1.00 16.45           N
ATOM    317  CA  VAL A  43      -4.792  28.828   5.785  1.00 13.47           C
ATOM    318  C   VAL A  43      -3.503  29.471   5.327  1.00 18.93           C
ATOM    319  O   VAL A  43      -2.730  30.002   6.145  1.00 17.25           O
ATOM    320  CB  VAL A  43      -4.610  27.311   6.026  1.00 17.47           C
ATOM    321  CG1 VAL A  43      -3.458  27.002   6.989  1.00 15.90           C
ATOM    322  CG2 VAL A  43      -5.918  26.733   6.532  1.00 14.49           C
ATOM    323  N   GLN A  44      -3.153  29.403   4.028  1.00 14.80           N
ATOM    324  CA  GLN A  44      -1.897  29.944   3.546  1.00 16.17           C
ATOM    325  C   GLN A  44      -1.682  31.442   3.770  1.00 15.63           C
ATOM    326  O   GLN A  44      -0.556  31.878   4.029  1.00 16.96           O
ATOM    327  CB  GLN A  44      -1.734  29.716   2.015  1.00 16.42           C
ATOM    328  CG  GLN A  44      -1.411  28.265   1.679  1.00 19.44           C
ATOM    329  CD  GLN A  44      -1.289  28.090   0.171  1.00 23.66           C
ATOM    330  OE1 GLN A  44      -2.276  28.257  -0.536  1.00 20.63           O
ATOM    331  NE2 GLN A  44      -0.100  27.763  -0.334  1.00 21.61           N
ATOM    332  N   GLU A  45      -2.761  32.201   3.656  1.00 17.72           N
ATOM    333  CA  GLU A  45      -2.657  33.649   3.741  1.00 20.01           C
ATOM    334  C   GLU A  45      -3.167  34.238   5.026  1.00 18.93           C
ATOM    335  O   GLU A  45      -2.740  35.356   5.356  1.00 23.99           O
ATOM    336  CB  GLU A  45      -3.494  34.245   2.606  1.00 18.32           C
ATOM    337  CG  GLU A  45      -3.188  33.674   1.244  1.00 23.77           C
ATOM    338  CD  GLU A  45      -3.500  34.633   0.120  1.00 33.30           C
ATOM    339  OE1 GLU A  45      -4.472  35.405   0.247  1.00 45.19           O
ATOM    340  OE2 GLU A  45      -2.787  34.615  -0.904  1.00 35.39           O
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ATOM	341	N	LYS	A	46	-4.104	33.593	5.696	1.00	18.31	N
ATOM	342	CA	LYS	A	46	-4.722	34.224	6.846	1.00	18.40	C
ATOM	343	C	LYS	A	46	-4.564	33.547	8.178	1.00	23.82	C
ATOM	344	O	LYS	A	46	-5.174	34.044	9.143	1.00	24.60	O
ATOM	345	CB	LYS	A	46	-6.240	34.381	6.571	1.00	18.01	C
ATOM	346	CG	LYS	A	46	-6.516	35.375	5.452	1.00	23.69	C
ATOM	347	CD	LYS	A	46	-7.584	34.839	4.507	1.00	30.76	C
ATOM	348	CE	LYS	A	46	-7.954	35.887	3.473	1.00	45.46	C
ATOM	349	NZ	LYS	A	46	-6.969	36.044	2.357	1.00	43.16	N
ATOM	350	N	VAL	A	47	-3.852	32.412	8.262	1.00	17.29	N
ATOM	351	CA	VAL	A	47	-3.835	31.749	9.578	1.00	15.28	C
ATOM	352	C	VAL	A	47	-2.404	31.717	10.121	1.00	13.52	C
ATOM	353	O	VAL	A	47	-1.586	31.140	9.413	1.00	16.31	O
ATOM	354	CB	VAL	A	47	-4.379	30.325	9.435	1.00	14.62	C
ATOM	355	CG1	VAL	A	47	-4.238	29.497	10.692	1.00	13.84	C
ATOM	356	CG2	VAL	A	47	-5.895	30.343	9.099	1.00	17.49	C
ATOM	357	N	GLY	A	48	-2.167	32.430	11.230	1.00	15.51	N
ATOM	358	CA	GLY	A	48	-0.768	32.459	11.709	1.00	16.24	C
ATOM	359	C	GLY	A	48	-0.370	31.116	12.317	1.00	15.45	C
ATOM	360	O	GLY	A	48	-1.210	30.436	12.875	1.00	15.17	O
ATOM	361	N	THR	A	49	0.919	30.785	12.177	1.00	16.03	N
ATOM	362	CA	THR	A	49	1.435	29.557	12.783	1.00	16.13	C
ATOM	363	C	THR	A	49	2.805	29.901	13.377	1.00	17.15	C
ATOM	364	O	THR	A	49	3.492	30.741	12.790	1.00	15.90	O
ATOM	365	CB	THR	A	49	1.526	28.452	11.739	1.00	16.91	C
ATOM	366	OG1	THR	A	49	0.181	28.169	11.289	1.00	14.21	O
ATOM	367	CG2	THR	A	49	1.936	27.132	12.400	1.00	16.21	C
ATOM	368	N	PHE	A	50	3.164	29.322	14.530	1.00	16.48	N
ATOM	369	CA	PHE	A	50	4.518	29.587	15.003	1.00	13.84	C
ATOM	370	C	PHE	A	50	5.592	28.969	14.111	1.00	14.81	C
ATOM	371	O	PHE	A	50	5.376	28.019	13.352	1.00	15.09	O
ATOM	372	CB	PHE	A	50	4.656	28.868	16.371	1.00	13.55	C
ATOM	373	CG	PHE	A	50	4.098	29.651	17.514	1.00	13.29	C
ATOM	374	CD1	PHE	A	50	2.810	30.140	17.494	1.00	16.48	C
ATOM	375	CD2	PHE	A	50	4.892	29.919	18.620	1.00	15.87	C
ATOM	376	CE1	PHE	A	50	2.321	30.870	18.548	1.00	15.15	C
ATOM	377	CE2	PHE	A	50	4.421	30.680	19.684	1.00	16.11	C
ATOM	378	CZ	PHE	A	50	3.105	31.159	19.662	1.00	15.82	C
ATOM	379	N	TYR	A	51	6.778	29.576	14.225	1.00	11.65	N
ATOM	380	CA	TYR	A	51	8.011	29.069	13.590	1.00	12.70	C
ATOM	381	C	TYR	A	51	8.790	28.246	14.609	1.00	11.84	C
ATOM	382	O	TYR	A	51	9.086	28.745	15.718	1.00	15.79	O
ATOM	383	CB	TYR	A	51	8.865	30.294	13.217	1.00	13.11	C
ATOM	384	CG	TYR	A	51	8.379	31.139	12.051	1.00	13.50	C
ATOM	385	CD1	TYR	A	51	7.326	32.026	12.276	1.00	13.00	C
ATOM	386	CD2	TYR	A	51	8.951	31.115	10.801	1.00	15.21	C
ATOM	387	CE1	TYR	A	51	6.833	32.845	11.286	1.00	15.73	C
ATOM	388	CE2	TYR	A	51	8.473	31.940	9.786	1.00	16.71	C
ATOM	389	CZ	TYR	A	51	7.410	32.788	10.036	1.00	19.01	C
ATOM	390	OH	TYR	A	51	6.947	33.585	9.011	1.00	16.58	O
ATOM	391	N	TRP	A	52	9.153	27.012	14.272	1.00	13.83	N
ATOM	392	CA	TRP	A	52	9.890	26.152	15.154	1.00	12.86	C
ATOM	393	C	TRP	A	52	11.404	26.265	14.965	1.00	13.06	C
ATOM	394	O	TRP	A	52	11.934	25.983	13.899	1.00	15.63	O
ATOM	395	CB	TRP	A	52	9.489	24.692	14.949	1.00	13.88	C
ATOM	396	CG	TRP	A	52	8.104	24.398	15.475	1.00	11.93	C
ATOM	397	CD1	TRP	A	52	6.914	24.897	15.023	1.00	14.24	C
ATOM	398	CD2	TRP	A	52	7.786	23.552	16.602	1.00	12.10	C
ATOM	399	NE1	TRP	A	52	5.866	24.374	15.731	1.00	10.67	N

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ATOM    400  CE2 TRP A  52       6.392  23.553  16.715  1.00 12.07           C
ATOM    401  CE3 TRP A  52       8.562  22.791  17.485  1.00 12.55           C
ATOM    402  CZ2 TRP A  52       5.737  22.798  17.706  1.00 12.99           C
ATOM    403  CZ3 TRP A  52       7.912  22.053  18.466  1.00 13.86           C
ATOM    404  CH2 TRP A  52       6.502  22.056  18.557  1.00 13.59           C
ATOM    405  N   ILE A  53      12.019  26.684  16.082  1.00 11.99           N
ATOM    406  CA  ILE A  53      13.490  26.888  16.037  1.00 13.95           C
ATOM    407  C   ILE A  53      14.119  25.692  16.735  1.00 15.56           C
ATOM    408  O   ILE A  53      14.563  25.776  17.907  1.00 13.88           O
ATOM    409  CB  ILE A  53      13.887  28.213  16.688  1.00 11.83           C
ATOM    410  CG1 ILE A  53      13.108  29.433  16.197  1.00 13.23           C
ATOM    411  CG2 ILE A  53      15.388  28.449  16.348  1.00 15.04           C
ATOM    412  CD1 ILE A  53      12.866  29.590  14.723  1.00 14.75           C
ATOM    413  N   SER A  54      13.986  24.549  16.079  1.00 15.20           N
ATOM    414  CA  SER A  54      14.235  23.237  16.686  1.00 10.25           C
ATOM    415  C   SER A  54      15.685  22.814  16.750  1.00 14.35           C
ATOM    416  O   SER A  54      15.968  21.697  17.179  1.00 15.04           O
ATOM    417  CB  SER A  54      13.378  22.178  15.982  1.00 13.89           C
ATOM    418  OG  SER A  54      11.993  22.583  15.969  1.00 17.22           O
ATOM    419  N   ASN A  55      16.595  23.631  16.271  1.00 15.12           N
ATOM    420  CA  ASN A  55      18.028  23.347  16.337  1.00 14.74           C
ATOM    421  C   ASN A  55      18.794  24.601  15.916  1.00 15.53           C
ATOM    422  O   ASN A  55      18.212  25.630  15.547  1.00 15.28           O
ATOM    423  CB  ASN A  55      18.434  22.138  15.511  1.00 14.25           C
ATOM    424  CG  ASN A  55      17.949  22.297  14.094  1.00 15.84           C
ATOM    425  OD1 ASN A  55      18.306  23.220  13.368  1.00 15.76           O
ATOM    426  ND2 ASN A  55      17.034  21.393  13.725  1.00 20.84           N
ATOM    427  N   ILE A  56      20.115  24.557  16.063  1.00 13.68           N
ATOM    428  CA  ILE A  56      20.993  25.713  15.847  1.00 16.07           C
ATOM    429  C   ILE A  56      20.940  26.138  14.395  1.00 15.12           C
ATOM    430  O   ILE A  56      20.891  27.354  14.124  1.00 14.39           O
ATOM    431  CB  ILE A  56      22.429  25.397  16.309  1.00 14.99           C
ATOM    432  CG1 ILE A  56      22.495  25.468  17.849  1.00 15.05           C
ATOM    433  CG2 ILE A  56      23.449  26.373  15.726  1.00 15.64           C
ATOM    434  CD1 ILE A  56      23.657  24.585  18.367  1.00 15.09           C
ATOM    435  N   PHE A  57      20.901  25.200  13.464  1.00 15.86           N
ATOM    436  CA  PHE A  57      20.747  25.523  12.048  1.00 11.80           C
ATOM    437  C   PHE A  57      19.503  26.421  11.832  1.00 15.24           C
ATOM    438  O   PHE A  57      19.550  27.342  11.017  1.00 14.57           O
ATOM    439  CB  PHE A  57      20.610  24.230  11.256  1.00 15.25           C
ATOM    440  CG  PHE A  57      20.373  24.376   9.783  1.00 14.23           C
ATOM    441  CD1 PHE A  57      21.438  24.566   8.932  1.00 15.89           C
ATOM    442  CD2 PHE A  57      19.093  24.374   9.256  1.00 15.74           C
ATOM    443  CE1 PHE A  57      21.242  24.700   7.568  1.00 16.76           C
ATOM    444  CE2 PHE A  57      18.873  24.474   7.900  1.00 21.90           C
ATOM    445  CZ  PHE A  57      19.959  24.679   7.063  1.00 19.88           C
ATOM    446  N   LEU A  58      18.390  26.082  12.443  1.00 13.64           N
ATOM    447  CA  LEU A  58      17.153  26.810  12.307  1.00 13.38           C
ATOM    448  C   LEU A  58      17.143  28.147  13.024  1.00 13.46           C
ATOM    449  O   LEU A  58      16.116  28.830  12.829  1.00 14.86           O
ATOM    450  CB  LEU A  58      15.905  25.998  12.647  1.00 18.35           C
ATOM    451  CG  LEU A  58      15.736  24.741  11.797  1.00 16.27           C
ATOM    452  CD1 LEU A  58      14.647  23.822  12.365  1.00 14.80           C
ATOM    453  CD2 LEU A  58      15.377  25.128  10.359  1.00 19.12           C
ATOM    454  N   LEU A  59      18.172  28.584  13.736  1.00 13.01           N
ATOM    455  CA  LEU A  59      18.157  29.994  14.198  1.00 11.72           C
ATOM    456  C   LEU A  59      17.950  30.951  13.038  1.00 14.70           C
ATOM    457  O   LEU A  59      17.368  32.026  13.261  1.00 16.53           O
ATOM    458  CB  LEU A  59      19.516  30.336  14.855  1.00 14.46           C
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ATOM	459	CG	LEU	A	59	19.716	29.678	16.239	1.00	18.29	C
ATOM	460	CD1	LEU	A	59	21.206	29.708	16.577	1.00	18.73	C
ATOM	461	CD2	LEU	A	59	18.916	30.460	17.273	1.00	17.83	C
ATOM	462	N	ARG	A	60	18.333	30.604	11.813	1.00	15.56	N
ATOM	463	CA	ARG	A	60	18.133	31.405	10.610	1.00	16.80	C
ATOM	464	C	ARG	A	60	16.664	31.649	10.348	1.00	15.95	C
ATOM	465	O	ARG	A	60	16.319	32.692	9.806	1.00	17.25	O
ATOM	466	CB	ARG	A	60	18.783	30.774	9.370	1.00	20.89	C
ATOM	467	CG	ARG	A	60	18.104	29.517	8.845	1.00	24.06	C
ATOM	468	CD	ARG	A	60	18.985	28.721	7.869	1.00	31.87	C
ATOM	469	NE	ARG	A	60	20.262	28.394	8.447	1.00	33.83	N
ATOM	470	CZ	ARG	A	60	21.518	28.222	8.089	1.00	35.90	C
ATOM	471	NH1	ARG	A	60	21.967	28.348	6.842	1.00	29.08	N
ATOM	472	NH2	ARG	A	60	22.384	27.921	9.063	1.00	33.10	N
ATOM	473	N	ASP	A	61	15.755	30.730	10.778	1.00	19.09	N
ATOM	474	CA	ASP	A	61	14.329	30.969	10.622	1.00	15.63	C
ATOM	475	C	ASP	A	61	13.852	32.144	11.476	1.00	15.44	C
ATOM	476	O	ASP	A	61	12.804	32.711	11.159	1.00	18.75	O
ATOM	477	CB	ASP	A	61	13.487	29.720	10.897	1.00	14.39	C
ATOM	478	CG	ASP	A	61	13.363	28.861	9.648	1.00	18.12	C
ATOM	479	OD1	ASP	A	61	13.802	29.295	8.564	1.00	23.64	O
ATOM	480	OD2	ASP	A	61	12.828	27.718	9.718	1.00	18.24	O
ATOM	481	N	ILE	A	62	14.596	32.541	12.545	1.00	13.50	N
ATOM	482	CA	ILE	A	62	14.158	33.734	13.271	1.00	16.23	C
ATOM	483	C	ILE	A	62	14.319	34.970	12.382	1.00	20.75	C
ATOM	484	O	ILE	A	62	13.452	35.865	12.334	1.00	16.45	O
ATOM	485	CB	ILE	A	62	14.966	33.902	14.572	1.00	18.28	C
ATOM	486	CG1	ILE	A	62	14.729	32.710	15.498	1.00	18.12	C
ATOM	487	CG2	ILE	A	62	14.544	35.150	15.339	1.00	16.41	C
ATOM	488	CD1	ILE	A	62	15.606	32.777	16.745	1.00	19.28	C
ATOM	489	N	ASP	A	63	15.422	35.030	11.631	1.00	17.23	N
ATOM	490	CA	ASP	A	63	15.624	36.137	10.689	1.00	19.20	C
ATOM	491	C	ASP	A	63	14.500	36.146	9.653	1.00	19.34	C
ATOM	492	O	ASP	A	63	13.958	37.217	9.321	1.00	22.74	O
ATOM	493	CB	ASP	A	63	17.019	36.085	10.059	1.00	21.12	C
ATOM	494	CG	ASP	A	63	18.111	36.118	11.113	1.00	21.39	C
ATOM	495	OD1	ASP	A	63	18.085	36.935	12.055	1.00	25.66	O
ATOM	496	OD2	ASP	A	63	19.068	35.309	11.065	1.00	30.68	O
ATOM	497	N	VAL	A	64	14.140	34.951	9.165	1.00	17.14	N
ATOM	498	CA	VAL	A	64	13.036	34.834	8.226	1.00	15.53	C
ATOM	499	C	VAL	A	64	11.744	35.398	8.835	1.00	14.91	C
ATOM	500	O	VAL	A	64	11.044	36.197	8.188	1.00	16.37	O
ATOM	501	CB	VAL	A	64	12.781	33.392	7.750	1.00	17.08	C
ATOM	502	CG1	VAL	A	64	11.594	33.375	6.782	1.00	18.67	C
ATOM	503	CG2	VAL	A	64	14.023	32.836	7.077	1.00	20.31	C
ATOM	504	N	ALA	A	65	11.417	34.975	10.063	1.00	15.69	N
ATOM	505	CA	ALA	A	65	10.189	35.446	10.713	1.00	15.10	C
ATOM	506	C	ALA	A	65	10.193	36.967	10.892	1.00	17.42	C
ATOM	507	O	ALA	A	65	9.203	37.683	10.672	1.00	15.84	O
ATOM	508	CB	ALA	A	65	9.954	34.724	12.052	1.00	17.84	C
ATOM	509	N	ILE	A	66	11.336	37.499	11.317	1.00	14.55	N
ATOM	510	CA	ILE	A	66	11.454	38.954	11.529	1.00	23.15	C
ATOM	511	C	ILE	A	66	11.294	39.695	10.214	1.00	18.04	C
ATOM	512	O	ILE	A	66	10.668	40.758	10.198	1.00	20.04	O
ATOM	513	CB	ILE	A	66	12.812	39.258	12.179	1.00	19.03	C
ATOM	514	CG1	ILE	A	66	12.785	38.863	13.645	1.00	19.68	C
ATOM	515	CG2	ILE	A	66	13.210	40.743	12.075	1.00	18.72	C
ATOM	516	CD1	ILE	A	66	14.150	38.787	14.282	1.00	18.42	C
ATOM	517	N	GLN	A	67	11.856	39.221	9.122	1.00	18.61	N

ATOM	518	CA	GLN	A	67	11.702	39.831	7.802	1.00	16.62	C
ATOM	519	C	GLN	A	67	10.233	39.906	7.451	1.00	21.78	C
ATOM	520	O	GLN	A	67	9.628	40.914	7.073	1.00	19.15	O
ATOM	521	CB	GLN	A	67	12.487	39.068	6.726	1.00	21.47	C
ATOM	522	CG	GLN	A	67	12.027	39.497	5.328	1.00	35.22	C
ATOM	523	CD	GLN	A	67	12.918	38.994	4.211	1.00	37.11	C
ATOM	524	OE1	GLN	A	67	14.114	38.779	4.391	1.00	33.68	O
ATOM	525	NE2	GLN	A	67	12.348	38.809	3.028	1.00	41.81	N
ATOM	526	N	ASN	A	68	9.551	38.748	7.606	1.00	18.06	N
ATOM	527	CA	ASN	A	68	8.127	38.671	7.361	1.00	18.35	C
ATOM	528	C	ASN	A	68	7.322	39.597	8.261	1.00	19.58	C
ATOM	529	O	ASN	A	68	6.359	40.200	7.802	1.00	23.36	O
ATOM	530	CB	ASN	A	68	7.647	37.217	7.516	1.00	14.91	C
ATOM	531	CG	ASN	A	68	8.226	36.286	6.479	1.00	22.58	C
ATOM	532	OD1	ASN	A	68	8.639	36.711	5.397	1.00	24.04	O
ATOM	533	ND2	ASN	A	68	8.200	34.978	6.758	1.00	18.67	N
ATOM	534	N	ALA	A	69	7.682	39.721	9.539	1.00	19.23	N
ATOM	535	CA	ALA	A	69	6.991	40.578	10.476	1.00	15.96	C
ATOM	536	C	ALA	A	69	7.135	42.046	10.004	1.00	22.11	C
ATOM	537	O	ALA	A	69	6.139	42.743	9.941	1.00	21.63	O
ATOM	538	CB	ALA	A	69	7.453	40.465	11.917	1.00	18.59	C
ATOM	539	N	ARG	A	70	8.343	42.432	9.609	1.00	22.18	N
ATOM	540	CA	ARG	A	70	8.567	43.803	9.148	1.00	22.08	C
ATOM	541	C	ARG	A	70	7.864	44.100	7.832	1.00	27.11	C
ATOM	542	O	ARG	A	70	7.398	45.233	7.637	1.00	30.23	O
ATOM	543	CB	ARG	A	70	10.067	44.076	9.026	1.00	19.06	C
ATOM	544	CG	ARG	A	70	10.775	44.009	10.370	1.00	22.53	C
ATOM	545	CD	ARG	A	70	12.270	44.320	10.277	1.00	23.54	C
ATOM	546	NE	ARG	A	70	12.742	44.598	11.647	1.00	21.57	N
ATOM	547	CZ	ARG	A	70	13.950	44.268	12.072	1.00	16.33	C
ATOM	548	NH1	ARG	A	70	14.809	43.724	11.227	1.00	23.70	N
ATOM	549	NH2	ARG	A	70	14.256	44.540	13.351	1.00	20.71	N
ATOM	550	N	ALA	A	71	7.694	43.123	6.946	1.00	24.69	N
ATOM	551	CA	ALA	A	71	6.964	43.311	5.701	1.00	27.59	C
ATOM	552	C	ALA	A	71	5.463	43.444	5.954	1.00	33.23	C
ATOM	553	O	ALA	A	71	4.738	44.190	5.279	1.00	34.34	O
ATOM	554	CB	ALA	A	71	7.209	42.148	4.740	1.00	32.45	C
ATOM	555	N	ALA	A	72	4.962	42.719	6.947	1.00	25.47	N
ATOM	556	CA	ALA	A	72	3.554	42.744	7.303	1.00	25.49	C
ATOM	557	C	ALA	A	72	3.206	44.121	7.858	1.00	30.33	C
ATOM	558	O	ALA	A	72	2.244	44.778	7.498	1.00	28.16	O
ATOM	559	CB	ALA	A	72	3.216	41.648	8.308	1.00	21.10	C
ATOM	560	N	LYS	A	73	4.103	44.596	8.714	1.00	30.08	N
ATOM	561	CA	LYS	A	73	3.891	45.888	9.381	1.00	34.22	C
ATOM	562	C	LYS	A	73	4.012	47.017	8.373	1.00	32.67	C
ATOM	563	O	LYS	A	73	3.334	48.039	8.511	1.00	28.18	O
ATOM	564	CB	LYS	A	73	4.812	45.861	10.576	1.00	41.50	C
ATOM	565	CG	LYS	A	73	5.848	46.941	10.667	1.00	48.31	C
ATOM	566	CD	LYS	A	73	5.362	48.086	11.538	1.00	50.90	C
ATOM	567	CE	LYS	A	73	5.118	47.686	12.983	1.00	59.96	C
ATOM	568	NZ	LYS	A	73	6.022	46.596	13.449	1.00	60.78	N
ATOM	569	N	ALA	A	74	4.766	46.799	7.290	1.00	30.13	N
ATOM	570	CA	ALA	A	74	4.858	47.776	6.212	1.00	35.21	C
ATOM	571	C	ALA	A	74	3.594	47.834	5.365	1.00	42.35	C
ATOM	572	O	ALA	A	74	3.390	48.892	4.743	1.00	45.03	O
ATOM	573	CB	ALA	A	74	6.059	47.523	5.311	1.00	29.40	C
ATOM	574	N	ARG	A	75	2.718	46.830	5.332	1.00	40.77	N
ATOM	575	CA	ARG	A	75	1.478	46.989	4.565	1.00	36.94	C
ATOM	576	C	ARG	A	75	0.316	47.321	5.496	1.00	36.22	C

ATOM	577	O	ARG	A	75	-0.855	47.166	5.152	1.00	37.82	O
ATOM	578	CB	ARG	A	75	1.151	45.795	3.681	1.00	43.25	C
ATOM	579	CG	ARG	A	75	1.341	44.478	4.378	1.00	44.99	C
ATOM	580	CD	ARG	A	75	1.163	43.280	3.447	1.00	49.43	C
ATOM	581	NE	ARG	A	75	0.818	42.142	4.312	1.00	43.11	N
ATOM	582	CZ	ARG	A	75	1.679	41.201	4.679	1.00	44.77	C
ATOM	583	NH1	ARG	A	75	2.931	41.211	4.256	1.00	39.44	N
ATOM	584	NH2	ARG	A	75	1.266	40.222	5.473	1.00	46.52	N
ATOM	585	N	GLY	A	76	0.648	47.799	6.695	1.00	33.79	N
ATOM	586	CA	GLY	A	76	-0.308	48.248	7.663	1.00	34.23	C
ATOM	587	C	GLY	A	76	-0.776	47.269	8.710	1.00	38.37	C
ATOM	588	O	GLY	A	76	-1.611	47.609	9.558	1.00	35.19	O
ATOM	589	N	GLU	A	77	-0.234	46.057	8.695	1.00	32.72	N
ATOM	590	CA	GLU	A	77	-0.648	45.064	9.690	1.00	27.88	C
ATOM	591	C	GLU	A	77	0.040	45.289	11.024	1.00	25.54	C
ATOM	592	O	GLU	A	77	0.981	46.072	11.184	1.00	23.07	O
ATOM	593	CB	GLU	A	77	-0.336	43.672	9.139	1.00	29.69	C
ATOM	594	CG	GLU	A	77	-0.915	43.442	7.742	1.00	29.74	C
ATOM	595	CD	GLU	A	77	-0.701	42.023	7.258	1.00	34.45	C
ATOM	596	OE1	GLU	A	77	-0.172	41.186	8.014	1.00	35.54	O
ATOM	597	OE2	GLU	A	77	-1.068	41.769	6.096	1.00	37.17	O
ATOM	598	N	ASN	A	78	-0.416	44.560	12.030	1.00	25.11	N
ATOM	599	CA	ASN	A	78	0.075	44.595	13.395	1.00	29.31	C
ATOM	600	C	ASN	A	78	0.282	43.157	13.914	1.00	21.55	C
ATOM	601	O	ASN	A	78	-0.569	42.589	14.611	1.00	20.53	O
ATOM	602	CB	ASN	A	78	-0.954	45.253	14.320	1.00	32.70	C
ATOM	603	CG	ASN	A	78	-0.321	46.480	14.944	1.00	48.63	C
ATOM	604	OD1	ASN	A	78	-0.413	47.540	14.329	1.00	43.28	O
ATOM	605	ND2	ASN	A	78	0.326	46.303	16.087	1.00	47.85	N
ATOM	606	N	PRO	A	79	1.411	42.633	13.518	1.00	26.64	N
ATOM	607	CA	PRO	A	79	1.735	41.238	13.758	1.00	22.72	C
ATOM	608	C	PRO	A	79	2.301	40.962	15.126	1.00	21.56	C
ATOM	609	O	PRO	A	79	2.821	41.834	15.829	1.00	20.72	O
ATOM	610	CB	PRO	A	79	2.779	40.863	12.672	1.00	19.05	C
ATOM	611	CG	PRO	A	79	3.404	42.190	12.343	1.00	27.23	C
ATOM	612	CD	PRO	A	79	2.420	43.275	12.683	1.00	25.70	C
ATOM	613	N	ILE	A	80	2.171	39.680	15.477	1.00	15.61	N
ATOM	614	CA	ILE	A	80	2.938	39.180	16.628	1.00	19.10	C
ATOM	615	C	ILE	A	80	3.537	37.877	16.092	1.00	19.54	C
ATOM	616	O	ILE	A	80	2.820	37.100	15.472	1.00	16.60	O
ATOM	617	CB	ILE	A	80	2.178	39.061	17.925	1.00	15.55	C
ATOM	618	CG1	ILE	A	80	3.108	38.513	19.022	1.00	17.32	C
ATOM	619	CG2	ILE	A	80	0.910	38.217	17.736	1.00	16.24	C
ATOM	620	CD1	ILE	A	80	2.543	38.603	20.427	1.00	17.37	C
ATOM	621	N	VAL	A	81	4.850	37.747	16.231	1.00	15.36	N
ATOM	622	CA	VAL	A	81	5.518	36.539	15.724	1.00	15.23	C
ATOM	623	C	VAL	A	81	5.580	35.411	16.750	1.00	18.65	C
ATOM	624	O	VAL	A	81	6.040	35.685	17.849	1.00	14.58	O
ATOM	625	CB	VAL	A	81	6.984	36.937	15.403	1.00	19.78	C
ATOM	626	CG1	VAL	A	81	7.811	35.721	14.984	1.00	16.80	C
ATOM	627	CG2	VAL	A	81	6.991	38.009	14.325	1.00	18.73	C
ATOM	628	N	GLY	A	82	5.128	34.206	16.412	1.00	13.32	N
ATOM	629	CA	GLY	A	82	5.241	33.099	17.379	1.00	14.02	C
ATOM	630	C	GLY	A	82	6.521	32.327	17.019	1.00	12.83	C
ATOM	631	O	GLY	A	82	6.688	31.929	15.865	1.00	11.47	O
ATOM	632	N	LEU	A	83	7.336	32.090	18.064	1.00	11.68	N
ATOM	633	CA	LEU	A	83	8.565	31.294	17.886	1.00	12.33	C
ATOM	634	C	LEU	A	83	8.548	30.159	18.919	1.00	13.16	C
ATOM	635	O	LEU	A	83	8.168	30.411	20.064	1.00	13.82	O

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ATOM    636  CB  LEU A  83       9.847  32.102  18.122  1.00 11.71           C
ATOM    637  CG  LEU A  83      10.062  33.262  17.139  1.00 14.81           C
ATOM    638  CD1 LEU A  83      11.339  34.012  17.563  1.00 14.82           C
ATOM    639  CD2 LEU A  83      10.147  32.759  15.722  1.00 13.22           C
ATOM    640  N   VAL A  84       9.038  28.983  18.533  1.00 11.69           N
ATOM    641  CA  VAL A  84       9.103  27.865  19.496  1.00  9.75           C
ATOM    642  C   VAL A  84      10.601  27.669  19.809  1.00 11.01           C
ATOM    643  O   VAL A  84      11.359  27.478  18.879  1.00 14.07           O
ATOM    644  CB  VAL A  84       8.547  26.553  18.921  1.00 12.58           C
ATOM    645  CG1 VAL A  84       8.466  25.532  20.063  1.00 15.29           C
ATOM    646  CG2 VAL A  84       7.133  26.763  18.360  1.00 11.72           C
ATOM    647  N   LEU A  85      10.971  27.880  21.063  1.00 12.20           N
ATOM    648  CA  LEU A  85      12.380  27.722  21.480  1.00 11.40           C
ATOM    649  C   LEU A  85      12.426  26.283  21.969  1.00 12.29           C
ATOM    650  O   LEU A  85      11.824  25.945  23.006  1.00 13.55           O
ATOM    651  CB  LEU A  85      12.649  28.760  22.580  1.00 13.55           C
ATOM    652  CG  LEU A  85      14.109  28.879  23.015  1.00 12.40           C
ATOM    653  CD1 LEU A  85      14.379  30.308  23.458  1.00 15.19           C
ATOM    654  CD2 LEU A  85      14.415  27.880  24.115  1.00 17.10           C
ATOM    655  N   TYR A  86      13.095  25.437  21.178  1.00 13.64           N
ATOM    656  CA  TYR A  86      13.032  23.997  21.430  1.00 10.83           C
ATOM    657  C   TYR A  86      14.341  23.293  21.099  1.00 15.34           C
ATOM    658  O   TYR A  86      14.442  22.719  20.022  1.00 14.86           O
ATOM    659  CB  TYR A  86      11.871  23.417  20.596  1.00 12.42           C
ATOM    660  CG  TYR A  86      11.571  21.960  20.640  1.00 12.60           C
ATOM    661  CD1 TYR A  86      11.395  21.258  21.829  1.00  9.94           C
ATOM    662  CD2 TYR A  86      11.444  21.206  19.462  1.00 13.74           C
ATOM    663  CE1 TYR A  86      11.067  19.904  21.879  1.00 12.13           C
ATOM    664  CE2 TYR A  86      11.148  19.865  19.480  1.00 16.78           C
ATOM    665  CZ  TYR A  86      10.962  19.209  20.687  1.00 15.36           C
ATOM    666  OH  TYR A  86      10.661  17.861  20.674  1.00 14.76           O
ATOM    667  N   ASN A  87      15.301  23.394  22.011  1.00 15.39           N
ATOM    668  CA  ASN A  87      16.574  22.656  21.769  1.00 10.89           C
ATOM    669  C   ASN A  87      17.212  22.231  23.068  1.00 12.51           C
ATOM    670  O   ASN A  87      18.464  22.143  23.192  1.00 14.17           O
ATOM    671  CB  ASN A  87      17.480  23.536  20.917  1.00 12.53           C
ATOM    672  CG  ASN A  87      18.561  22.708  20.211  1.00 15.12           C
ATOM    673  OD1 ASN A  87      18.454  21.490  20.075  1.00 13.51           O
ATOM    674  ND2 ASN A  87      19.600  23.388  19.764  1.00 14.63           N
ATOM    675  N   LEU A  88      16.400  21.886  24.068  1.00 12.48           N
ATOM    676  CA  LEU A  88      16.959  21.489  25.367  1.00 13.76           C
ATOM    677  C   LEU A  88      17.902  20.318  25.277  1.00 13.37           C
ATOM    678  O   LEU A  88      17.751  19.344  24.520  1.00 14.66           O
ATOM    679  CB  LEU A  88      15.748  21.029  26.236  1.00 16.32           C
ATOM    680  CG  LEU A  88      15.926  21.035  27.755  1.00 16.68           C
ATOM    681  CD1 LEU A  88      16.144  22.457  28.258  1.00 16.55           C
ATOM    682  CD2 LEU A  88      14.696  20.405  28.411  1.00 16.00           C
ATOM    683  N   PRO A  89      18.969  20.370  26.058  1.00 15.44           N
ATOM    684  CA  PRO A  89      19.862  19.217  26.120  1.00 15.41           C
ATOM    685  C   PRO A  89      19.082  18.051  26.703  1.00 15.17           C
ATOM    686  O   PRO A  89      18.248  18.176  27.631  1.00 14.69           O
ATOM    687  CB  PRO A  89      21.036  19.606  27.042  1.00 15.65           C
ATOM    688  CG  PRO A  89      20.869  21.083  27.115  1.00 15.43           C
ATOM    689  CD  PRO A  89      19.403  21.455  26.923  1.00 12.94           C
ATOM    690  N   ASP A  90      19.234  16.866  26.126  1.00 12.82           N
ATOM    691  CA  ASP A  90      18.521  15.656  26.505  1.00 16.10           C
ATOM    692  C   ASP A  90      17.005  15.834  26.379  1.00 19.34           C
ATOM    693  O   ASP A  90      16.188  15.366  27.198  1.00 17.20           O
ATOM    694  CB  ASP A  90      18.860  15.221  27.942  1.00 13.45           C
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ATOM    695  CG  ASP A  90      20.270  14.653  28.032  1.00 24.51           C
ATOM    696  OD1 ASP A  90      20.987  14.711  27.006  1.00 19.04           O
ATOM    697  OD2 ASP A  90      20.643  14.173  29.132  1.00 18.33           O
ATOM    698  N   ARG A  91      16.643  16.574  25.345  1.00 13.43           N
ATOM    699  CA  ARG A  91      15.274  16.893  24.957  1.00 14.50           C
ATOM    700  C   ARG A  91      14.362  15.679  24.953  1.00 14.98           C
ATOM    701  O   ARG A  91      14.786  14.585  24.580  1.00 15.76           O
ATOM    702  CB  ARG A  91      15.330  17.432  23.511  1.00 13.98           C
ATOM    703  CG  ARG A  91      14.190  18.399  23.179  1.00 13.34           C
ATOM    704  CD  ARG A  91      14.482  19.165  21.896  1.00 13.92           C
ATOM    705  NE  ARG A  91      14.392  18.287  20.703  1.00 13.23           N
ATOM    706  CZ  ARG A  91      14.566  18.799  19.485  1.00 12.35           C
ATOM    707  NH1 ARG A  91      14.823  20.077  19.201  1.00 13.29           N
ATOM    708  NH2 ARG A  91      14.487  17.914  18.456  1.00 14.70           N
ATOM    709  N   ASP A  92      13.125  15.846  25.494  1.00 11.96           N
ATOM    710  CA  ASP A  92      12.175  14.744  25.570  1.00 17.95           C
ATOM    711  C   ASP A  92      12.803  13.526  26.251  1.00 15.83           C
ATOM    712  O   ASP A  92      12.795  12.409  25.748  1.00 13.78           O
ATOM    713  CB  ASP A  92      11.670  14.338  24.184  1.00 14.41           C
ATOM    714  CG  ASP A  92      10.927  15.477  23.512  1.00 16.54           C
ATOM    715  OD1 ASP A  92       9.841  15.800  24.048  1.00 18.60           O
ATOM    716  OD2 ASP A  92      11.358  16.080  22.499  1.00 16.72           O
ATOM    717  N   CYS A  93      13.231  13.758  27.514  1.00 14.74           N
ATOM    718  CA  CYS A  93      14.057  12.726  28.159  1.00 18.87           C
ATOM    719  C   CYS A  93      13.371  11.401  28.341  1.00 16.21           C
ATOM    720  O   CYS A  93      13.982  10.318  28.447  1.00 21.36           O
ATOM    721  CB  CYS A  93      14.638  13.268  29.478  1.00 17.56           C
ATOM    722  SG  CYS A  93      13.408  13.566  30.760  1.00 17.27           S
ATOM    723  N   SER A  94      12.030  11.356  28.441  1.00 17.34           N
ATOM    724  CA  SER A  94      11.314  10.116  28.685  1.00 19.63           C
ATOM    725  C   SER A  94      11.521   9.075  27.608  1.00 22.85           C
ATOM    726  O   SER A  94      11.374   7.890  27.948  1.00 23.92           O
ATOM    727  CB  SER A  94       9.826  10.341  28.937  1.00 18.36           C
ATOM    728  OG ASER A  94       9.631  10.981  30.198  0.50 18.80           O
ATOM    729  OG BSER A  94       9.246  11.173  27.951  0.50 20.11           O
ATOM    730  N   ALA A  95      11.995   9.428  26.413  1.00 18.96           N
ATOM    731  CA  ALA A  95      12.274   8.454  25.376  1.00 23.37           C
ATOM    732  C   ALA A  95      13.675   7.868  25.545  1.00 20.16           C
ATOM    733  O   ALA A  95      13.983   6.871  24.895  1.00 21.70           O
ATOM    734  CB  ALA A  95      12.079   9.129  24.033  1.00 22.92           C
ATOM    735  N   GLY A  96      14.482   8.417  26.464  1.00 17.34           N
ATOM    736  CA  GLY A  96      15.756   7.783  26.787  1.00 16.87           C
ATOM    737  C   GLY A  96      17.013   8.322  26.168  1.00 17.95           C
ATOM    738  O   GLY A  96      18.124   7.930  26.541  1.00 19.74           O
ATOM    739  N   GLU A  97      16.863   9.329  25.305  1.00 15.22           N
ATOM    740  CA  GLU A  97      18.012   9.956  24.639  1.00 14.61           C
ATOM    741  C   GLU A  97      17.522  11.306  24.118  1.00 14.63           C
ATOM    742  O   GLU A  97      16.351  11.361  23.733  1.00 16.47           O
ATOM    743  CB  GLU A  97      18.464   9.075  23.457  1.00 13.39           C
ATOM    744  CG  GLU A  97      19.491   9.749  22.553  1.00 15.47           C
ATOM    745  CD  GLU A  97      19.803   8.954  21.307  1.00 18.25           C
ATOM    746  OE1 GLU A  97      18.951   8.168  20.843  1.00 16.69           O
ATOM    747  OE2 GLU A  97      20.919   9.159  20.768  1.00 24.69           O
ATOM    748  N   SER A  98      18.328  12.363  24.076  1.00 16.83           N
ATOM    749  CA  SER A  98      17.811  13.612  23.483  1.00 15.37           C
ATOM    750  C   SER A  98      17.165  13.351  22.115  1.00 13.72           C
ATOM    751  O   SER A  98      17.722  12.667  21.288  1.00 18.18           O
ATOM    752  CB  SER A  98      18.961  14.591  23.250  1.00 13.25           C
ATOM    753  OG  SER A  98      18.475  15.843  22.800  1.00 14.77           O
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ATOM    754  N   SER A  99      16.031  14.033  21.889  1.00 13.48           N
ATOM    755  CA  SER A  99      15.397  14.000  20.581  1.00 12.53           C
ATOM    756  C   SER A  99      16.013  15.107  19.702  1.00 13.29           C
ATOM    757  O   SER A  99      15.610  15.164  18.536  1.00 15.74           O
ATOM    758  CB  SER A  99      13.894  14.283  20.703  1.00 14.05           C
ATOM    759  OG  SER A  99      13.664  15.522  21.322  1.00 13.06           O
ATOM    760  N   GLY A 100      16.896  15.925  20.256  1.00 14.54           N
ATOM    761  CA  GLY A 100      17.558  17.017  19.521  1.00 11.74           C
ATOM    762  C   GLY A 100      19.068  16.771  19.471  1.00 15.29           C
ATOM    763  O   GLY A 100      19.642  15.757  19.892  1.00 15.03           O
ATOM    764  N   GLU A 101      19.770  17.796  18.993  1.00 12.15           N
ATOM    765  CA  GLU A 101      21.205  17.711  18.778  1.00 13.21           C
ATOM    766  C   GLU A 101      22.048  17.876  20.030  1.00 14.91           C
ATOM    767  O   GLU A 101      23.240  17.482  19.964  1.00 15.83           O
ATOM    768  CB  GLU A 101      21.613  18.752  17.710  1.00 14.60           C
ATOM    769  CG  GLU A 101      21.471  20.171  18.302  1.00 14.60           C
ATOM    770  CD  GLU A 101      21.410  21.197  17.188  1.00 16.09           C
ATOM    771  OE1 GLU A 101      21.582  20.878  15.990  1.00 14.91           O
ATOM    772  OE2 GLU A 101      21.171  22.369  17.547  1.00 14.19           O
ATOM    773  N   LEU A 102      21.483  18.344  21.140  1.00 14.14           N
ATOM    774  CA  LEU A 102      22.247  18.594  22.362  1.00 15.84           C
ATOM    775  C   LEU A 102      22.010  17.503  23.401  1.00 13.78           C
ATOM    776  O   LEU A 102      20.907  17.058  23.637  1.00 13.84           O
ATOM    777  CB  LEU A 102      21.902  19.952  22.983  1.00 14.72           C
ATOM    778  CG  LEU A 102      22.083  21.148  22.052  1.00 13.44           C
ATOM    779  CD1 LEU A 102      21.767  22.432  22.815  1.00 15.55           C
ATOM    780  CD2 LEU A 102      23.493  21.236  21.498  1.00 15.65           C
ATOM    781  N   LYS A 103      23.123  17.055  23.946  1.00 15.05           N
ATOM    782  CA  LYS A 103      23.126  16.009  24.981  1.00 18.34           C
ATOM    783  C   LYS A 103      23.906  16.514  26.181  1.00 17.23           C
ATOM    784  O   LYS A 103      24.975  17.124  26.013  1.00 16.83           O
ATOM    785  CB  LYS A 103      23.780  14.739  24.415  1.00 15.93           C
ATOM    786  CG  LYS A 103      23.064  14.205  23.170  1.00 14.26           C
ATOM    787  CD  LYS A 103      23.580  12.857  22.734  1.00 20.35           C
ATOM    788  CE  LYS A 103      22.554  12.151  21.828  1.00 18.89           C
ATOM    789  NZ  LYS A 103      23.106  10.796  21.493  1.00 20.43           N
ATOM    790  N   LEU A 104      23.408  16.241  27.385  1.00 17.62           N
ATOM    791  CA  LEU A 104      24.102  16.750  28.573  1.00 19.92           C
ATOM    792  C   LEU A 104      25.507  16.188  28.674  1.00 19.44           C
ATOM    793  O   LEU A 104      26.416  16.961  28.996  1.00 18.23           O
ATOM    794  CB  LEU A 104      23.292  16.527  29.844  1.00 14.04           C
ATOM    795  CG  LEU A 104      22.010  17.371  29.962  1.00 17.18           C
ATOM    796  CD1 LEU A 104      21.202  16.833  31.126  1.00 18.42           C
ATOM    797  CD2 LEU A 104      22.366  18.840  30.141  1.00 17.13           C
ATOM    798  N   SER A 105      25.691  14.929  28.284  1.00 18.96           N
ATOM    799  CA  SER A 105      27.001  14.293  28.324  1.00 20.51           C
ATOM    800  C   SER A 105      27.940  14.733  27.209  1.00 23.29           C
ATOM    801  O   SER A 105      29.071  14.218  27.138  1.00 23.43           O
ATOM    802  CB  SER A 105      26.769  12.775  28.282  1.00 21.63           C
ATOM    803  OG  SER A 105      26.052  12.401  27.118  1.00 18.93           O
ATOM    804  N   GLN A 106      27.535  15.630  26.320  1.00 21.97           N
ATOM    805  CA  GLN A 106      28.345  16.194  25.269  1.00 16.00           C
ATOM    806  C   GLN A 106      28.348  17.712  25.417  1.00 18.59           C
ATOM    807  O   GLN A 106      28.097  18.485  24.485  1.00 18.41           O
ATOM    808  CB  GLN A 106      27.885  15.789  23.863  1.00 16.42           C
ATOM    809  CG  GLN A 106      27.863  14.274  23.614  1.00 19.64           C
ATOM    810  CD  GLN A 106      27.231  13.951  22.265  1.00 30.90           C
ATOM    811  OE1 GLN A 106      26.602  14.783  21.593  1.00 24.11           O
ATOM    812  NE2 GLN A 106      27.373  12.676  21.882  1.00 24.20           N
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ATOM	813	N	ASN	A	107	28.624	18.165	26.651	1.00 17.89	N
ATOM	814	CA	ASN	A	107	28.697	19.566	27.024	1.00 16.26	C
ATOM	815	C	ASN	A	107	27.422	20.303	26.625	1.00 18.05	C
ATOM	816	O	ASN	A	107	27.448	21.473	26.294	1.00 20.14	O
ATOM	817	CB	ASN	A	107	29.928	20.225	26.384	1.00 19.79	C
ATOM	818	CG	ASN	A	107	30.297	21.606	26.886	1.00 17.57	C
ATOM	819	OD1	ASN	A	107	30.798	22.410	26.077	1.00 26.88	O
ATOM	820	ND2	ASN	A	107	30.122	21.937	28.157	1.00 15.24	N
ATOM	821	N	GLY	A	108	26.284	19.631	26.678	1.00 18.99	N
ATOM	822	CA	GLY	A	108	25.043	20.199	26.134	1.00 13.67	C
ATOM	823	C	GLY	A	108	24.518	21.427	26.811	1.00 16.60	C
ATOM	824	O	GLY	A	108	23.943	22.317	26.149	1.00 16.83	O
ATOM	825	N	LEU	A	109	24.644	21.522	28.134	1.00 15.55	N
ATOM	826	CA	LEU	A	109	24.209	22.706	28.828	1.00 17.89	C
ATOM	827	C	LEU	A	109	24.961	23.942	28.372	1.00 15.95	C
ATOM	828	O	LEU	A	109	24.352	24.949	28.010	1.00 15.07	O
ATOM	829	CB	LEU	A	109	24.335	22.490	30.355	1.00 21.55	C
ATOM	830	CG	LEU	A	109	23.899	23.758	31.092	1.00 16.19	C
ATOM	831	CD1	LEU	A	109	22.397	23.997	30.832	1.00 23.18	C
ATOM	832	CD2	LEU	A	109	24.129	23.642	32.589	1.00 19.38	C
ATOM	833	N	ASN	A	110	26.304	23.883	28.269	1.00 17.29	N
ATOM	834	CA	ASN	A	110	27.036	25.042	27.788	1.00 20.46	C
ATOM	835	C	ASN	A	110	26.684	25.408	26.347	1.00 18.61	C
ATOM	836	O	ASN	A	110	26.533	26.598	26.066	1.00 19.34	O
ATOM	837	CB	ASN	A	110	28.560	24.824	27.887	1.00 23.88	C
ATOM	838	CG	ASN	A	110	29.020	25.013	29.319	1.00 27.93	C
ATOM	839	OD1	ASN	A	110	29.893	24.295	29.839	1.00 30.25	O
ATOM	840	ND2	ASN	A	110	28.426	25.997	29.984	1.00 32.83	N
ATOM	841	N	ARG	A	111	26.536	24.438	25.456	1.00 20.77	N
ATOM	842	CA	ARG	A	111	26.220	24.652	24.042	1.00 17.52	C
ATOM	843	C	ARG	A	111	24.806	25.273	23.901	1.00 12.78	C
ATOM	844	O	ARG	A	111	24.605	26.179	23.096	1.00 16.87	O
ATOM	845	CB	ARG	A	111	26.333	23.376	23.231	1.00 19.76	C
ATOM	846	CG	ARG	A	111	27.693	22.673	23.233	1.00 20.68	C
ATOM	847	CD	ARG	A	111	27.628	21.341	22.482	1.00 19.60	C
ATOM	848	NE	ARG	A	111	29.014	20.871	22.251	1.00 24.33	N
ATOM	849	CZ	ARG	A	111	29.280	19.666	21.733	1.00 25.75	C
ATOM	850	NH1	ARG	A	111	28.329	18.817	21.355	1.00 23.72	N
ATOM	851	NH2	ARG	A	111	30.563	19.339	21.577	1.00 28.92	N
ATOM	852	N	TYR	A	112	23.886	24.784	24.736	1.00 16.65	N
ATOM	853	CA	TYR	A	112	22.542	25.373	24.766	1.00 17.96	C
ATOM	854	C	TYR	A	112	22.594	26.844	25.170	1.00 15.90	C
ATOM	855	O	TYR	A	112	21.966	27.683	24.518	1.00 16.47	O
ATOM	856	CB	TYR	A	112	21.660	24.671	25.767	1.00 17.04	C
ATOM	857	CG	TYR	A	112	20.209	25.072	25.859	1.00 13.37	C
ATOM	858	CD1	TYR	A	112	19.281	24.698	24.901	1.00 16.21	C
ATOM	859	CD2	TYR	A	112	19.783	25.793	26.956	1.00 15.93	C
ATOM	860	CE1	TYR	A	112	17.941	25.064	25.062	1.00 15.95	C
ATOM	861	CE2	TYR	A	112	18.444	26.143	27.118	1.00 18.62	C
ATOM	862	CZ	TYR	A	112	17.529	25.757	26.153	1.00 17.89	C
ATOM	863	OH	TYR	A	112	16.211	26.118	26.334	1.00 14.52	O
ATOM	864	N	LYS	A	113	23.349	27.159	26.241	1.00 16.36	N
ATOM	865	CA	LYS	A	113	23.430	28.607	26.528	1.00 17.52	C
ATOM	866	C	LYS	A	113	24.110	29.426	25.443	1.00 18.91	C
ATOM	867	O	LYS	A	113	23.591	30.478	25.023	1.00 17.56	O
ATOM	868	CB	LYS	A	113	24.226	28.828	27.825	1.00 18.04	C
ATOM	869	CG	LYS	A	113	23.621	28.083	28.988	1.00 16.40	C
ATOM	870	CD	LYS	A	113	24.470	28.340	30.255	1.00 23.83	C
ATOM	871	CE	LYS	A	113	23.682	27.860	31.470	1.00 24.00	C

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ATOM    872  NZ  LYS A 113      24.572  27.690  32.648  1.00 30.37           N
ATOM    873  N   ASN A 114      25.331  29.043  25.055  1.00 17.28           N
ATOM    874  CA  ASN A 114      26.162  29.880  24.208  1.00 19.38           C
ATOM    875  C   ASN A 114      25.897  29.777  22.727  1.00 19.48           C
ATOM    876  O   ASN A 114      26.052  30.807  22.048  1.00 17.22           O
ATOM    877  CB  ASN A 114      27.650  29.525  24.511  1.00 24.81           C
ATOM    878  CG  ASN A 114      27.899  29.742  26.006  1.00 24.65           C
ATOM    879  OD1 ASN A 114      27.481  30.742  26.575  1.00 31.58           O
ATOM    880  ND2 ASN A 114      28.549  28.810  26.686  1.00 36.52           N
ATOM    881  N   GLU A 115      25.496  28.635  22.218  1.00 16.28           N
ATOM    882  CA  GLU A 115      25.288  28.484  20.787  1.00 14.50           C
ATOM    883  C   GLU A 115      23.802  28.539  20.394  1.00 15.88           C
ATOM    884  O   GLU A 115      23.602  28.663  19.175  1.00 16.27           O
ATOM    885  CB  GLU A 115      25.885  27.144  20.316  1.00 19.55           C
ATOM    886  CG  GLU A 115      27.406  27.095  20.373  1.00 22.17           C
ATOM    887  CD  GLU A 115      27.970  25.805  19.793  1.00 22.87           C
ATOM    888  OE1 GLU A 115      27.790  25.506  18.589  1.00 27.70           O
ATOM    889  OE2 GLU A 115      28.558  25.016  20.552  1.00 23.83           O
ATOM    890  N   TYR A 116      22.906  28.446  21.387  1.00 15.52           N
ATOM    891  CA  TYR A 116      21.481  28.462  21.014  1.00 17.64           C
ATOM    892  C   TYR A 116      20.716  29.588  21.719  1.00 16.03           C
ATOM    893  O   TYR A 116      20.259  30.450  20.953  1.00 15.92           O
ATOM    894  CB  TYR A 116      20.872  27.073  21.205  1.00 13.83           C
ATOM    895  CG  TYR A 116      19.393  27.030  20.870  1.00 13.56           C
ATOM    896  CD1 TYR A 116      18.953  26.958  19.553  1.00 13.73           C
ATOM    897  CD2 TYR A 116      18.451  27.119  21.875  1.00 13.86           C
ATOM    898  CE1 TYR A 116      17.593  26.953  19.239  1.00 13.57           C
ATOM    899  CE2 TYR A 116      17.074  27.119  21.576  1.00 14.58           C
ATOM    900  CZ  TYR A 116      16.674  27.016  20.267  1.00 15.69           C
ATOM    901  OH  TYR A 116      15.326  27.015  19.946  1.00 13.22           O
ATOM    902  N   VAL A 117      20.689  29.631  23.048  1.00 17.46           N
ATOM    903  CA  VAL A 117      19.957  30.735  23.679  1.00 13.96           C
ATOM    904  C   VAL A 117      20.588  32.097  23.387  1.00 14.91           C
ATOM    905  O   VAL A 117      19.864  33.020  22.982  1.00 15.45           O
ATOM    906  CB  VAL A 117      19.824  30.480  25.193  1.00 14.52           C
ATOM    907  CG1 VAL A 117      19.161  31.623  25.904  1.00 16.06           C
ATOM    908  CG2 VAL A 117      18.994  29.189  25.400  1.00 13.31           C
ATOM    909  N   ASN A 118      21.917  32.244  23.509  1.00 18.31           N
ATOM    910  CA  ASN A 118      22.459  33.596  23.271  1.00 14.39           C
ATOM    911  C   ASN A 118      22.109  34.178  21.939  1.00 13.82           C
ATOM    912  O   ASN A 118      21.577  35.308  21.869  1.00 18.34           O
ATOM    913  CB  ASN A 118      23.952  33.624  23.584  1.00 14.65           C
ATOM    914  CG  ASN A 118      24.168  33.447  25.071  1.00 15.75           C
ATOM    915  OD1 ASN A 118      23.329  33.421  25.965  1.00 19.36           O
ATOM    916  ND2 ASN A 118      25.470  33.291  25.396  1.00 17.69           N
ATOM    917  N   PRO A 119      22.313  33.482  20.856  1.00 13.44           N
ATOM    918  CA  PRO A 119      22.025  33.949  19.513  1.00 12.82           C
ATOM    919  C   PRO A 119      20.532  34.203  19.352  1.00 19.27           C
ATOM    920  O   PRO A 119      20.144  35.160  18.669  1.00 15.57           O
ATOM    921  CB  PRO A 119      22.616  33.003  18.473  1.00 19.42           C
ATOM    922  CG  PRO A 119      23.256  31.959  19.330  1.00 25.27           C
ATOM    923  CD  PRO A 119      23.073  32.222  20.803  1.00 18.21           C
ATOM    924  N   PHE A 120      19.712  33.365  19.971  1.00 16.00           N
ATOM    925  CA  PHE A 120      18.271  33.558  19.941  1.00 17.20           C
ATOM    926  C   PHE A 120      17.931  34.921  20.561  1.00 15.58           C
ATOM    927  O   PHE A 120      17.244  35.731  19.920  1.00 16.71           O
ATOM    928  CB  PHE A 120      17.575  32.443  20.722  1.00 14.76           C
ATOM    929  CG  PHE A 120      16.127  32.181  20.415  1.00 14.80           C
ATOM    930  CD1 PHE A 120      15.135  33.137  20.606  1.00 13.11           C
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	ATOM	931	CD2	PHE	A	120	15.811	30.899	19.974	1.00 16.69	C
	ATOM	932	CE1	PHE	A	120	13.826	32.780	20.356	1.00 15.61	C
	ATOM	933	CE2	PHE	A	120	14.501	30.528	19.727	1.00 14.01	C
	ATOM	934	CZ	PHE	A	120	13.525	31.502	19.905	1.00 15.53	C
5	ATOM	935	N	ALA	A	121	18.517	35.154	21.734	1.00 14.93	N
	ATOM	936	CA	ALA	A	121	18.220	36.414	22.434	1.00 15.88	C
	ATOM	937	C	ALA	A	121	18.742	37.624	21.686	1.00 17.20	C
	ATOM	938	O	ALA	A	121	18.061	38.658	21.692	1.00 18.44	O
	ATOM	939	CB	ALA	A	121	18.765	36.348	23.837	1.00 16.02	C
10	ATOM	940	N	GLN	A	122	19.903	37.496	21.070	1.00 19.30	N
	ATOM	941	CA	GLN	A	122	20.493	38.612	20.326	1.00 15.89	C
	ATOM	942	C	GLN	A	122	19.552	39.054	19.218	1.00 19.44	C
	ATOM	943	O	GLN	A	122	19.306	40.256	19.035	1.00 17.37	O
	ATOM	944	CB	GLN	A	122	21.839	38.182	19.716	1.00 17.87	C
15	ATOM	945	CG	GLN	A	122	22.486	39.243	18.821	1.00 28.60	C
	ATOM	946	CD	GLN	A	122	23.758	38.701	18.187	1.00 38.44	C
	ATOM	947	OE1	GLN	A	122	24.263	37.620	18.507	1.00 38.79	O
	ATOM	948	NE2	GLN	A	122	24.324	39.459	17.253	1.00 33.90	N
	ATOM	949	N	LYS	A	123	19.049	38.076	18.443	1.00 17.09	N
20	ATOM	950	CA	LYS	A	123	18.160	38.404	17.337	1.00 16.59	C
	ATOM	951	C	LYS	A	123	16.855	39.041	17.785	1.00 14.92	C
	ATOM	952	O	LYS	A	123	16.394	40.013	17.186	1.00 16.41	O
	ATOM	953	CB	LYS	A	123	17.793	37.060	16.645	1.00 16.25	C
	ATOM	954	CG	LYS	A	123	18.976	36.600	15.780	1.00 17.30	C
25	ATOM	955	CD	LYS	A	123	18.545	35.275	15.127	1.00 20.49	C
	ATOM	956	CE	LYS	A	123	19.754	34.575	14.492	1.00 18.08	C
	ATOM	957	NZ	LYS	A	123	20.333	35.361	13.386	1.00 22.16	N
	ATOM	958	N	LEU	A	124	16.276	38.563	18.893	1.00 15.41	N
	ATOM	959	CA	LEU	A	124	15.018	39.180	19.341	1.00 13.86	C
30	ATOM	960	C	LEU	A	124	15.260	40.546	19.983	1.00 17.17	C
	ATOM	961	O	LEU	A	124	14.435	41.432	19.748	1.00 19.88	O
	ATOM	962	CB	LEU	A	124	14.280	38.258	20.315	1.00 15.51	C
	ATOM	963	CG	LEU	A	124	13.315	37.246	19.683	1.00 15.13	C
	ATOM	964	CD1	LEU	A	124	14.037	36.293	18.737	1.00 17.75	C
35	ATOM	965	CD2	LEU	A	124	12.708	36.415	20.806	1.00 15.78	C
	ATOM	966	N	LYS	A	125	16.333	40.712	20.751	1.00 15.59	N
	ATOM	967	CA	LYS	A	125	16.557	42.023	21.399	1.00 16.00	C
	ATOM	968	C	LYS	A	125	16.931	43.048	20.348	1.00 21.55	C
	ATOM	969	O	LYS	A	125	16.623	44.235	20.538	1.00 21.82	O
40	ATOM	970	CB	LYS	A	125	17.618	41.910	22.503	1.00 18.83	C
	ATOM	971	CG	LYS	A	125	17.099	41.184	23.743	1.00 20.04	C
	ATOM	972	CD	LYS	A	125	18.175	41.020	24.821	1.00 18.92	C
	ATOM	973	CE	LYS	A	125	17.525	40.401	26.050	1.00 21.03	C
	ATOM	974	NZ	LYS	A	125	18.489	40.092	27.118	1.00 22.21	N
45	ATOM	975	N	ALA	A	126	17.534	42.650	19.231	1.00 17.28	N
	ATOM	976	CA	ALA	A	126	17.842	43.631	18.166	1.00 13.39	C
	ATOM	977	C	ALA	A	126	16.568	44.077	17.483	1.00 19.73	C
	ATOM	978	O	ALA	A	126	16.429	45.242	17.085	1.00 22.21	O
	ATOM	979	CB	ALA	A	126	18.817	43.020	17.172	1.00 21.36	C
50	ATOM	980	N	ALA	A	127	15.578	43.182	17.380	1.00 20.52	N
	ATOM	981	CA	ALA	A	127	14.338	43.538	16.686	1.00 21.72	C
	ATOM	982	C	ALA	A	127	13.312	44.074	17.657	1.00 19.05	C
	ATOM	983	O	ALA	A	127	12.205	43.547	17.850	1.00 17.22	O
	ATOM	984	CB	ALA	A	127	13.813	42.301	15.934	1.00 15.16	C
55	ATOM	985	N	SER	A	128	13.624	45.197	18.304	1.00 18.37	N
	ATOM	986	CA	SER	A	128	12.805	45.859	19.306	1.00 22.55	C
	ATOM	987	C	SER	A	128	11.468	46.408	18.805	1.00 20.88	C
	ATOM	988	O	SER	A	128	10.576	46.703	19.612	1.00 19.69	O
	ATOM	989	CB	SER	A	128	13.606	47.005	19.943	1.00 18.62	C

ATOM	990	OG	ASER	A	128	14.055	46.604	21.223	0.30	23.23	O
ATOM	991	OG	BSER	A	128	14.073	47.950	19.019	0.70	16.43	O
ATOM	992	N	ASP	A	129	11.327	46.525	17.506	1.00	19.68	N
ATOM	993	CA	ASP	A	129	10.194	46.960	16.749	1.00	20.35	C
ATOM	994	C	ASP	A	129	9.193	45.823	16.508	1.00	24.26	C
ATOM	995	O	ASP	A	129	8.088	46.035	16.017	1.00	24.84	O
ATOM	996	CB	ASP	A	129	10.637	47.474	15.372	1.00	18.77	C
ATOM	997	CG	ASP	A	129	11.386	46.503	14.498	1.00	24.11	C
ATOM	998	OD1	ASP	A	129	12.305	45.798	14.988	1.00	22.58	O
ATOM	999	OD2	ASP	A	129	11.170	46.385	13.273	1.00	23.69	O
ATOM	1000	N	VAL	A	130	9.631	44.595	16.790	1.00	19.32	N
ATOM	1001	CA	VAL	A	130	8.732	43.454	16.572	1.00	19.81	C
ATOM	1002	C	VAL	A	130	8.239	42.838	17.866	1.00	16.92	C
ATOM	1003	O	VAL	A	130	8.997	42.653	18.818	1.00	17.20	O
ATOM	1004	CB	VAL	A	130	9.533	42.417	15.749	1.00	14.96	C
ATOM	1005	CG1	VAL	A	130	8.736	41.144	15.490	1.00	22.58	C
ATOM	1006	CG2	VAL	A	130	9.963	43.040	14.417	1.00	16.89	C
ATOM	1007	N	GLN	A	131	6.940	42.453	17.883	1.00	16.00	N
ATOM	1008	CA	GLN	A	131	6.467	41.776	19.092	1.00	17.10	C
ATOM	1009	C	GLN	A	131	6.631	40.255	18.958	1.00	15.89	C
ATOM	1010	O	GLN	A	131	6.252	39.764	17.885	1.00	18.07	O
ATOM	1011	CB	GLN	A	131	4.966	42.099	19.344	1.00	15.42	C
ATOM	1012	CG	GLN	A	131	4.836	43.607	19.652	1.00	19.47	C
ATOM	1013	CD	GLN	A	131	5.269	43.973	21.054	1.00	18.68	C
ATOM	1014	OE1	GLN	A	131	5.002	43.270	22.033	1.00	21.52	O
ATOM	1015	NE2	GLN	A	131	5.997	45.089	21.171	1.00	23.09	N
ATOM	1016	N	PHE	A	132	7.089	39.584	20.007	1.00	14.56	N
ATOM	1017	CA	PHE	A	132	7.284	38.147	19.930	1.00	15.44	C
ATOM	1018	C	PHE	A	132	6.559	37.406	21.041	1.00	19.18	C
ATOM	1019	O	PHE	A	132	6.544	37.825	22.201	1.00	16.83	O
ATOM	1020	CB	PHE	A	132	8.787	37.804	20.110	1.00	13.70	C
ATOM	1021	CG	PHE	A	132	9.705	38.310	19.036	1.00	12.58	C
ATOM	1022	CD1	PHE	A	132	9.937	37.640	17.844	1.00	14.61	C
ATOM	1023	CD2	PHE	A	132	10.297	39.565	19.184	1.00	14.89	C
ATOM	1024	CE1	PHE	A	132	10.763	38.155	16.888	1.00	16.67	C
ATOM	1025	CE2	PHE	A	132	11.098	40.101	18.195	1.00	14.44	C
ATOM	1026	CZ	PHE	A	132	11.377	39.390	17.039	1.00	24.08	C
ATOM	1027	N	ALA	A	133	5.966	36.272	20.665	1.00	13.43	N
ATOM	1028	CA	ALA	A	133	5.450	35.323	21.629	1.00	12.38	C
ATOM	1029	C	ALA	A	133	6.337	34.058	21.520	1.00	16.52	C
ATOM	1030	O	ALA	A	133	6.392	33.482	20.436	1.00	14.68	O
ATOM	1031	CB	ALA	A	133	4.033	34.835	21.390	1.00	13.99	C
ATOM	1032	N	VAL	A	134	7.053	33.780	22.595	1.00	13.32	N
ATOM	1033	CA	VAL	A	134	7.990	32.652	22.516	1.00	14.91	C
ATOM	1034	C	VAL	A	134	7.502	31.562	23.433	1.00	15.83	C
ATOM	1035	O	VAL	A	134	7.346	31.694	24.636	1.00	14.31	O
ATOM	1036	CB	VAL	A	134	9.423	33.077	22.932	1.00	14.14	C
ATOM	1037	CG1	VAL	A	134	10.355	31.869	22.932	1.00	12.93	C
ATOM	1038	CG2	VAL	A	134	9.927	34.185	22.031	1.00	15.66	C
ATOM	1039	N	ILE	A	135	7.293	30.362	22.869	1.00	11.12	N
ATOM	1040	CA	ILE	A	135	6.941	29.189	23.589	1.00	11.50	C
ATOM	1041	C	ILE	A	135	8.257	28.518	23.987	1.00	12.31	C
ATOM	1042	O	ILE	A	135	9.110	28.250	23.147	1.00	14.89	C
ATOM	1043	CB	ILE	A	135	6.038	28.247	22.790	1.00	12.69	C
ATOM	1044	CG1	ILE	A	135	4.654	28.910	22.741	1.00	11.65	C
ATOM	1045	CG2	ILE	A	135	6.039	26.855	23.412	1.00	13.80	C
ATOM	1046	CD1	ILE	A	135	3.609	28.073	21.999	1.00	13.61	C
ATOM	1047	N	LEU	A	136	8.344	28.301	25.297	1.00	13.71	N
ATOM	1048	CA	LEU	A	136	9.575	27.726	25.781	1.00	12.72	C

ATOM	1049	C	LEU	A	136	9.461	26.231	26.045	1.00	10.83	C
ATOM	1050	O	LEU	A	136	8.802	25.712	26.924	1.00	13.13	O
ATOM	1051	CB	LEU	A	136	10.030	28.354	27.100	1.00	12.51	C
ATOM	1052	CG	LEU	A	136	10.209	29.869	27.074	1.00	16.39	C
ATOM	1053	CD1	LEU	A	136	10.168	30.365	28.507	1.00	15.36	C
ATOM	1054	CD2	LEU	A	136	11.501	30.220	26.353	1.00	18.35	C
ATOM	1055	N	GLU	A	137	10.284	25.506	25.301	1.00	12.51	N
ATOM	1056	CA	GLU	A	137	10.564	24.096	25.410	1.00	14.89	C
ATOM	1057	C	GLU	A	137	9.404	23.159	25.670	1.00	11.61	C
ATOM	1058	O	GLU	A	137	9.116	22.614	26.758	1.00	13.87	O
ATOM	1059	CB	GLU	A	137	11.622	23.904	26.533	1.00	12.34	C
ATOM	1060	CG	GLU	A	137	12.972	24.554	26.230	1.00	13.28	C
ATOM	1061	CD	GLU	A	137	13.743	23.890	25.071	1.00	12.17	C
ATOM	1062	OE1	GLU	A	137	13.360	22.784	24.653	1.00	11.92	O
ATOM	1063	OE2	GLU	A	137	14.762	24.465	24.687	1.00	13.65	O
ATOM	1064	N	PRO	A	138	8.640	22.899	24.631	1.00	12.86	N
ATOM	1065	CA	PRO	A	138	7.510	21.986	24.623	1.00	8.34	C
ATOM	1066	C	PRO	A	138	7.864	20.672	25.317	1.00	14.11	C
ATOM	1067	O	PRO	A	138	8.894	20.035	25.171	1.00	12.67	O
ATOM	1068	CB	PRO	A	138	7.175	21.749	23.148	1.00	13.80	C
ATOM	1069	CG	PRO	A	138	7.626	23.075	22.551	1.00	14.20	C
ATOM	1070	CD	PRO	A	138	8.896	23.480	23.286	1.00	14.92	C
ATOM	1071	N	ASP	A	139	6.963	20.237	26.190	1.00	13.22	N
ATOM	1072	CA	ASP	A	139	6.937	19.052	26.998	1.00	14.09	C
ATOM	1073	C	ASP	A	139	8.046	18.965	28.040	1.00	15.12	C
ATOM	1074	O	ASP	A	139	8.124	17.912	28.658	1.00	15.93	O
ATOM	1075	CB	ASP	A	139	6.914	17.744	26.167	1.00	13.10	C
ATOM	1076	CG	ASP	A	139	5.615	17.654	25.399	1.00	15.49	C
ATOM	1077	OD1	ASP	A	139	4.615	18.248	25.910	1.00	14.68	O
ATOM	1078	OD2	ASP	A	139	5.546	16.987	24.341	1.00	18.06	O
ATOM	1079	N	ALA	A	140	8.932	19.959	28.186	1.00	14.06	N
ATOM	1080	CA	ALA	A	140	10.039	19.789	29.147	1.00	13.79	C
ATOM	1081	C	ALA	A	140	9.464	19.621	30.554	1.00	15.47	C
ATOM	1082	O	ALA	A	140	9.906	18.741	31.254	1.00	17.78	O
ATOM	1083	CB	ALA	A	140	11.006	20.969	29.099	1.00	12.43	C
ATOM	1084	N	ILE	A	141	8.568	20.517	30.944	1.00	15.62	N
ATOM	1085	CA	ILE	A	141	7.991	20.357	32.313	1.00	14.08	C
ATOM	1086	C	ILE	A	141	7.253	19.069	32.503	1.00	19.31	C
ATOM	1087	O	ILE	A	141	7.331	18.423	33.567	1.00	20.35	O
ATOM	1088	CB	ILE	A	141	7.160	21.607	32.590	1.00	16.62	C
ATOM	1089	CG1	ILE	A	141	8.134	22.779	32.763	1.00	22.60	C
ATOM	1090	CG2	ILE	A	141	6.308	21.455	33.857	1.00	20.87	C
ATOM	1091	CD1	ILE	A	141	7.414	24.098	32.915	1.00	22.62	C
ATOM	1092	N	GLY	A	142	6.559	18.556	31.485	1.00	16.46	N
ATOM	1093	CA	GLY	A	142	5.894	17.256	31.563	1.00	17.32	C
ATOM	1094	C	GLY	A	142	6.924	16.182	31.917	1.00	19.41	C
ATOM	1095	O	GLY	A	142	6.728	15.401	32.840	1.00	18.39	O
ATOM	1096	N	ASN	A	143	8.024	16.143	31.179	1.00	18.77	N
ATOM	1097	CA	ASN	A	143	9.090	15.165	31.396	1.00	18.65	C
ATOM	1098	C	ASN	A	143	9.720	15.333	32.774	1.00	25.02	C
ATOM	1099	O	ASN	A	143	10.147	14.331	33.374	1.00	24.01	O
ATOM	1100	CB	ASN	A	143	10.076	15.318	30.241	1.00	16.63	C
ATOM	1101	CG	ASN	A	143	9.715	14.612	28.954	1.00	15.12	C
ATOM	1102	OD1	ASN	A	143	9.886	13.401	28.887	1.00	25.88	O
ATOM	1103	ND2	ASN	A	143	9.252	15.382	27.980	1.00	17.49	N
ATOM	1104	N	MET	A	144	9.786	16.550	33.303	1.00	18.94	N
ATOM	1105	CA	MET	A	144	10.307	16.798	34.636	1.00	26.82	C
ATOM	1106	C	MET	A	144	9.372	16.318	35.746	1.00	32.01	C
ATOM	1107	O	MET	A	144	9.881	15.713	36.711	1.00	35.38	O

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ATOM   1108  CB  MET A 144      10.542  18.287  34.866  1.00 27.38           C
ATOM   1109  CG  MET A 144      11.979  18.760  34.828  1.00 37.46           C
ATOM   1110  SD  MET A 144      11.961  20.522  34.459  1.00 41.27           S
ATOM   1111  CE  MET A 144      12.279  20.503  32.697  1.00 16.91           C
ATOM   1112  N   VAL A 145       8.072  16.516  35.629  1.00 28.09           N
ATOM   1113  CA  VAL A 145       7.098  16.068  36.618  1.00 27.59           C
ATOM   1114  C   VAL A 145       6.868  14.570  36.679  1.00 34.48           C
ATOM   1115  O   VAL A 145       6.650  13.976  37.744  1.00 34.53           O
ATOM   1116  CB  VAL A 145       5.704  16.703  36.353  1.00 28.57           C
ATOM   1117  CG1 VAL A 145       4.575  16.007  37.108  1.00 36.94           C
ATOM   1118  CG2 VAL A 145       5.701  18.182  36.679  1.00 30.18           C
ATOM   1119  N   THR A 146       6.732  13.920  35.538  1.00 25.46           N
ATOM   1120  CA  THR A 146       6.393  12.500  35.516  1.00 27.86           C
ATOM   1121  C   THR A 146       7.560  11.630  35.097  1.00 27.16           C
ATOM   1122  O   THR A 146       7.452  10.404  35.049  1.00 31.17           O
ATOM   1123  CB  THR A 146       5.176  12.309  34.591  1.00 31.04           C
ATOM   1124  OG1 THR A 146       5.574  12.739  33.275  1.00 24.62           O
ATOM   1125  CG2 THR A 146       3.993  13.150  35.046  1.00 38.27           C
ATOM   1126  N   GLY A 147       8.703  12.234  34.779  1.00 22.60           N
ATOM   1127  CA  GLY A 147       9.856  11.498  34.294  1.00 22.02           C
ATOM   1128  C   GLY A 147      10.643  10.820  35.411  1.00 22.12           C
ATOM   1129  O   GLY A 147      11.517  11.476  35.968  1.00 25.38           O
ATOM   1130  N   THR A 148      10.389   9.547  35.668  1.00 22.71           N
ATOM   1131  CA  THR A 148      11.132   8.866  36.740  1.00 22.82           C
ATOM   1132  C   THR A 148      12.224   7.909  36.295  1.00 27.70           C
ATOM   1133  O   THR A 148      12.851   7.257  37.145  1.00 24.98           O
ATOM   1134  CB  THR A 148      10.158   8.034  37.602  1.00 26.91           C
ATOM   1135  OG1 THR A 148       9.501   7.109  36.735  1.00 32.28           O
ATOM   1136  CG2 THR A 148       9.145   8.931  38.302  1.00 25.46           C
ATOM   1137  N   SER A 149      12.449   7.803  34.991  1.00 24.08           N
ATOM   1138  CA  SER A 149      13.513   6.934  34.489  1.00 21.87           C
ATOM   1139  C   SER A 149      14.846   7.513  34.922  1.00 21.61           C
ATOM   1140  O   SER A 149      15.002   8.706  35.238  1.00 22.03           O
ATOM   1141  CB  SER A 149      13.419   6.882  32.948  1.00 20.36           C
ATOM   1142  OG  SER A 149      13.890   8.171  32.486  1.00 23.85           O
ATOM   1143  N   ALA A 150      15.871   6.669  34.978  1.00 22.79           N
ATOM   1144  CA  ALA A 150      17.213   7.091  35.329  1.00 23.93           C
ATOM   1145  C   ALA A 150      17.705   8.217  34.438  1.00 22.88           C
ATOM   1146  O   ALA A 150      18.224   9.216  34.903  1.00 21.44           O
ATOM   1147  CB  ALA A 150      18.141   5.880  35.220  1.00 27.97           C
ATOM   1148  N   PHE A 151      17.467   8.078  33.129  1.00 23.42           N
ATOM   1149  CA  PHE A 151      17.883   9.112  32.198  1.00 16.87           C
ATOM   1150  C   PHE A 151      17.269  10.473  32.486  1.00 10.90           C
ATOM   1151  O   PHE A 151      17.979  11.482  32.471  1.00 20.09           O
ATOM   1152  CB  PHE A 151      17.583   8.620  30.780  1.00 18.22           C
ATOM   1153  CG  PHE A 151      18.153   9.589  29.751  1.00 18.83           C
ATOM   1154  CD1 PHE A 151      19.497   9.662  29.502  1.00 18.91           C
ATOM   1155  CD2 PHE A 151      17.293  10.422  29.056  1.00 21.05           C
ATOM   1156  CE1 PHE A 151      20.013  10.525  28.570  1.00 19.18           C
ATOM   1157  CE2 PHE A 151      17.784  11.288  28.099  1.00 20.98           C
ATOM   1158  CZ  PHE A 151      19.148  11.362  27.870  1.00 18.15           C
ATOM   1159  N   CYS A 152      15.965  10.573  32.683  1.00 16.28           N
ATOM   1160  CA  CYS A 152      15.344  11.860  33.014  1.00 15.15           C
ATOM   1161  C   CYS A 152      15.785  12.443  34.358  1.00 18.37           C
ATOM   1162  O   CYS A 152      16.001  13.661  34.510  1.00 20.83           O
ATOM   1163  CB  CYS A 152      13.816  11.744  33.144  1.00 21.04           C
ATOM   1164  SG  CYS A 152      12.996  11.728  31.528  1.00 18.91           S
ATOM   1165  N   ARG A 153      15.898  11.539  35.327  1.00 22.50           N
ATOM   1166  CA  ARG A 153      16.290  11.972  36.679  1.00 18.82           C
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ATOM   1167  C   ARG A 153      17.682  12.565  36.676  1.00 19.45           C
ATOM   1168  O   ARG A 153      18.000  13.552  37.359  1.00 22.29           O
ATOM   1169  CB  ARG A 153      16.170  10.769  37.639  1.00 22.11           C
ATOM   1170  CG  ARG A 153      14.729  10.397  37.953  1.00 23.68           C
ATOM   1171  CD  ARG A 153      14.613   9.459  39.159  1.00 24.90           C
ATOM   1172  NE  ARG A 153      15.024   8.085  38.873  1.00 22.17           N
ATOM   1173  CZ  ARG A 153      16.145   7.558  39.389  1.00 19.83           C
ATOM   1174  NH1 ARG A 153      16.919   8.263  40.199  1.00 20.95           N
ATOM   1175  NH2 ARG A 153      16.417   6.317  39.040  1.00 23.59           N
ATOM   1176  N   ASN A 154      18.555  12.017  35.832  1.00 17.62           N
ATOM   1177  CA  ASN A 154      19.891  12.505  35.625  1.00 22.93           C
ATOM   1178  C   ASN A 154      19.944  13.851  34.912  1.00 23.27           C
ATOM   1179  O   ASN A 154      20.981  14.497  34.968  1.00 27.40           O
ATOM   1180  CB  ASN A 154      20.693  11.525  34.745  1.00 31.91           C
ATOM   1181  CG  ASN A 154      21.708  10.799  35.600  1.00 40.14           C
ATOM   1182  OD1 ASN A 154      22.689  11.414  36.026  1.00 39.02           O
ATOM   1183  ND2 ASN A 154      21.455   9.522  35.834  1.00 45.43           N
ATOM   1184  N   ALA A 155      18.926  14.179  34.145  1.00 18.21           N
ATOM   1185  CA  ALA A 155      18.859  15.400  33.361  1.00 20.94           C
ATOM   1186  C   ALA A 155      18.123  16.554  34.032  1.00 21.85           C
ATOM   1187  O   ALA A 155      18.222  17.717  33.652  1.00 17.04           O
ATOM   1188  CB  ALA A 155      18.080  15.044  32.076  1.00 24.09           C
ATOM   1189  N   ARG A 156      17.357  16.210  35.068  1.00 20.11           N
ATOM   1190  CA  ARG A 156      16.464  17.138  35.759  1.00 26.10           C
ATOM   1191  C   ARG A 156      17.140  18.440  36.145  1.00 23.61           C
ATOM   1192  O   ARG A 156      16.738  19.539  35.711  1.00 19.66           O
ATOM   1193  CB  ARG A 156      15.851  16.443  36.986  1.00 22.71           C
ATOM   1194  CG  ARG A 156      14.935  17.330  37.849  1.00 22.00           C
ATOM   1195  CD  ARG A 156      14.180  16.552  38.884  1.00 33.46           C
ATOM   1196  NE  ARG A 156      12.937  16.977  39.460  1.00 37.06           N
ATOM   1197  CZ  ARG A 156      11.980  17.789  39.076  1.00 36.95           C
ATOM   1198  NH1 ARG A 156      12.104  18.423  37.923  1.00 42.13           N
ATOM   1199  NH2 ARG A 156      10.914  18.011  39.839  1.00 35.77           N
ATOM   1200  N   GLY A 157      18.179  18.376  36.968  1.00 23.96           N
ATOM   1201  CA  GLY A 157      18.945  19.511  37.459  1.00 23.34           C
ATOM   1202  C   GLY A 157      19.376  20.503  36.404  1.00 26.04           C
ATOM   1203  O   GLY A 157      19.006  21.685  36.305  1.00 18.02           O
ATOM   1204  N   PRO A 158      20.199  20.029  35.458  1.00 21.24           N
ATOM   1205  CA  PRO A 158      20.703  20.821  34.357  1.00 15.71           C
ATOM   1206  C   PRO A 158      19.562  21.320  33.473  1.00 16.28           C
ATOM   1207  O   PRO A 158      19.615  22.448  32.934  1.00 18.27           O
ATOM   1208  CB  PRO A 158      21.654  19.887  33.571  1.00 19.23           C
ATOM   1209  CG  PRO A 158      22.064  18.906  34.666  1.00 20.64           C
ATOM   1210  CD  PRO A 158      20.797  18.692  35.492  1.00 22.65           C
ATOM   1211  N   GLN A 159      18.499  20.542  33.322  1.00 17.51           N
ATOM   1212  CA  GLN A 159      17.421  21.043  32.433  1.00 20.20           C
ATOM   1213  C   GLN A 159      16.707  22.221  33.072  1.00 20.95           C
ATOM   1214  O   GLN A 159      16.347  23.201  32.396  1.00 19.79           O
ATOM   1215  CB  GLN A 159      16.470  19.942  31.991  1.00 16.22           C
ATOM   1216  CG  GLN A 159      17.047  18.970  30.976  1.00 15.45           C
ATOM   1217  CD  GLN A 159      16.000  17.932  30.596  1.00 17.65           C
ATOM   1218  OE1 GLN A 159      15.070  17.662  31.333  1.00 19.74           O
ATOM   1219  NE2 GLN A 159      16.150  17.353  29.418  1.00 16.86           N
ATOM   1220  N   GLN A 160      16.549  22.207  34.393  1.00 19.49           N
ATOM   1221  CA  GLN A 160      15.933  23.343  35.084  1.00 20.57           C
ATOM   1222  C   GLN A 160      16.804  24.574  34.939  1.00 18.11           C
ATOM   1223  O   GLN A 160      16.350  25.689  34.671  1.00 17.46           O
ATOM   1224  CB  GLN A 160      15.666  23.065  36.554  1.00 22.41           C
ATOM   1225  CG  GLN A 160      14.623  21.977  36.821  1.00 27.14           C
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ATOM   1226  CD  GLN A 160      14.497  21.713  38.312  1.00 33.51           C
ATOM   1227  OE1 GLN A 160      15.338  22.146  39.102  1.00 44.68           O
ATOM   1228  NE2 GLN A 160      13.483  20.991  38.760  1.00 33.51           N
ATOM   1229  N   GLU A 161      18.131  24.381  35.068  1.00 17.66           N
ATOM   1230  CA  GLU A 161      19.072  25.468  34.873  1.00 18.15           C
ATOM   1231  C   GLU A 161      19.028  25.979  33.429  1.00 20.38           C
ATOM   1232  O   GLU A 161      19.076  27.188  33.196  1.00 20.25           O
ATOM   1233  CB  GLU A 161      20.503  25.022  35.222  1.00 20.40           C
ATOM   1234  CG  GLU A 161      21.530  26.108  34.926  1.00 26.49           C
ATOM   1235  CD  GLU A 161      22.926  25.765  35.413  1.00 32.47           C
ATOM   1236  OE1 GLU A 161      23.055  24.829  36.231  1.00 29.68           O
ATOM   1237  OE2 GLU A 161      23.896  26.436  34.997  1.00 33.32           O
ATOM   1238  N   ALA A 162      18.891  25.063  32.456  1.00 21.33           N
ATOM   1239  CA  ALA A 162      18.805  25.494  31.068  1.00 18.84           C
ATOM   1240  C   ALA A 162      17.588  26.379  30.799  1.00 16.13           C
ATOM   1241  O   ALA A 162      17.703  27.406  30.123  1.00 16.11           O
ATOM   1242  CB  ALA A 162      18.721  24.318  30.095  1.00 17.53           C
ATOM   1243  N   ILE A 163      16.436  25.946  31.297  1.00 17.98           N
ATOM   1244  CA  ILE A 163      15.206  26.713  31.030  1.00 14.97           C
ATOM   1245  C   ILE A 163      15.241  28.062  31.757  1.00 18.57           C
ATOM   1246  O   ILE A 163      14.916  29.148  31.234  1.00 16.69           O
ATOM   1247  CB  ILE A 163      13.981  25.889  31.412  1.00 17.85           C
ATOM   1248  CG1 ILE A 163      13.861  24.602  30.579  1.00 19.40           C
ATOM   1249  CG2 ILE A 163      12.753  26.776  31.167  1.00 22.22           C
ATOM   1250  CD1 ILE A 163      12.644  23.748  30.917  1.00 18.79           C
ATOM   1251  N   GLY A 164      15.741  28.003  33.013  1.00 20.77           N
ATOM   1252  CA  GLY A 164      15.870  29.267  33.766  1.00 17.85           C
ATOM   1253  C   GLY A 164      16.780  30.222  33.012  1.00 15.29           C
ATOM   1254  O   GLY A 164      16.565  31.430  33.021  1.00 20.23           O
ATOM   1255  N   TYR A 165      17.854  29.674  32.412  1.00 17.68           N
ATOM   1256  CA  TYR A 165      18.766  30.488  31.651  1.00 14.10           C
ATOM   1257  C   TYR A 165      18.089  31.131  30.436  1.00 17.53           C
ATOM   1258  O   TYR A 165      18.269  32.328  30.188  1.00 19.89           O
ATOM   1259  CB  TYR A 165      20.018  29.700  31.213  1.00 12.38           C
ATOM   1260  CG  TYR A 165      20.983  30.576  30.444  1.00 17.60           C
ATOM   1261  CD1 TYR A 165      21.894  31.360  31.178  1.00 19.80           C
ATOM   1262  CD2 TYR A 165      21.050  30.678  29.074  1.00 18.96           C
ATOM   1263  CE1 TYR A 165      22.771  32.196  30.527  1.00 20.15           C
ATOM   1264  CE2 TYR A 165      21.922  31.525  28.423  1.00 20.01           C
ATOM   1265  CZ  TYR A 165      22.809  32.288  29.158  1.00 17.49           C
ATOM   1266  OH  TYR A 165      23.706  33.124  28.549  1.00 21.23           O
ATOM   1267  N   ALA A 166      17.258  30.328  29.773  1.00 16.23           N
ATOM   1268  CA  ALA A 166      16.539  30.882  28.616  1.00 16.91           C
ATOM   1269  C   ALA A 166      15.573  31.997  29.042  1.00 15.92           C
ATOM   1270  O   ALA A 166      15.608  33.036  28.368  1.00 16.18           O
ATOM   1271  CB  ALA A 166      15.810  29.697  27.993  1.00 15.30           C
ATOM   1272  N   ILE A 167      14.870  31.833  30.160  1.00 16.04           N
ATOM   1273  CA  ILE A 167      13.983  32.893  30.634  1.00 16.03           C
ATOM   1274  C   ILE A 167      14.836  34.112  30.968  1.00 17.37           C
ATOM   1275  O   ILE A 167      14.478  35.231  30.619  1.00 16.76           O
ATOM   1276  CB  ILE A 167      13.211  32.456  31.886  1.00 14.55           C
ATOM   1277  CG1 ILE A 167      12.262  31.286  31.540  1.00 20.02           C
ATOM   1278  CG2 ILE A 167      12.380  33.571  32.515  1.00 16.28           C
ATOM   1279  CD1 ILE A 167      11.683  30.536  32.720  1.00 18.04           C
ATOM   1280  N   SER A 168      15.938  33.863  31.701  1.00 19.53           N
ATOM   1281  CA  SER A 168      16.787  34.999  32.105  1.00 21.13           C
ATOM   1282  C   SER A 168      17.281  35.813  30.932  1.00 19.30           C
ATOM   1283  O   SER A 168      17.511  37.031  31.058  1.00 19.82           O
ATOM   1284  CB  SER A 168      17.975  34.532  32.958  1.00 21.41           C
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ATOM   1285  OG  SER A 168      19.078  33.943  32.267  1.00 20.79           O
ATOM   1286  N   GLN A 169      17.566  35.192  29.786  1.00 15.41           N
ATOM   1287  CA  GLN A 169      18.084  35.921  28.646  1.00 14.97           C
ATOM   1288  C   GLN A 169      17.052  36.594  27.745  1.00 15.50           C
ATOM   1289  O   GLN A 169      17.444  37.311  26.826  1.00 17.12           O
ATOM   1290  CB  GLN A 169      18.887  34.976  27.726  1.00 16.43           C
ATOM   1291  CG  GLN A 169      20.239  34.598  28.343  1.00 18.51           C
ATOM   1292  CD  GLN A 169      21.179  35.766  28.084  1.00 17.43           C
ATOM   1293  OE1 GLN A 169      21.376  36.223  26.946  1.00 21.30           O
ATOM   1294  NE2 GLN A 169      21.702  36.323  29.165  1.00 18.42           N
ATOM   1295  N   LEU A 170      15.767  36.358  27.972  1.00 16.44           N
ATOM   1296  CA  LEU A 170      14.716  36.849  27.106  1.00 18.88           C
ATOM   1297  C   LEU A 170      13.745  37.780  27.801  1.00 19.41           C
ATOM   1298  O   LEU A 170      12.524  37.701  27.642  1.00 18.95           O
ATOM   1299  CB  LEU A 170      13.946  35.619  26.545  1.00 16.72           C
ATOM   1300  CG  LEU A 170      14.844  34.795  25.607  1.00 12.75           C
ATOM   1301  CD1 LEU A 170      14.174  33.440  25.307  1.00 12.96           C
ATOM   1302  CD2 LEU A 170      15.157  35.480  24.300  1.00 15.61           C
ATOM   1303  N   GLN A 171      14.283  38.632  28.694  1.00 18.55           N
ATOM   1304  CA  GLN A 171      13.418  39.609  29.362  1.00 18.48           C
ATOM   1305  C   GLN A 171      13.442  40.916  28.568  1.00 20.27           C
ATOM   1306  O   GLN A 171      14.508  41.531  28.466  1.00 22.91           O
ATOM   1307  CB  GLN A 171      13.958  39.868  30.763  1.00 18.70           C
ATOM   1308  CG  GLN A 171      13.960  38.733  31.738  1.00 20.71           C
ATOM   1309  CD  GLN A 171      12.579  38.204  32.086  1.00 28.28           C
ATOM   1310  OE1 GLN A 171      11.751  38.921  32.646  1.00 26.82           O
ATOM   1311  NE2 GLN A 171      12.355  36.945  31.756  1.00 18.32           N
ATOM   1312  N   ALA A 172      12.326  41.329  27.990  1.00 22.62           N
ATOM   1313  CA  ALA A 172      12.253  42.585  27.236  1.00 18.98           C
ATOM   1314  C   ALA A 172      10.780  42.954  27.087  1.00 23.47           C
ATOM   1315  O   ALA A 172       9.943  42.041  27.155  1.00 22.25           O
ATOM   1316  CB  ALA A 172      12.896  42.466  25.877  1.00 19.85           C
ATOM   1317  N   SER A 173      10.416  44.223  26.924  1.00 21.36           N
ATOM   1318  CA  SER A 173       8.994  44.537  26.823  1.00 25.83           C
ATOM   1319  C   SER A 173       8.326  44.033  25.553  1.00 24.83           C
ATOM   1320  O   SER A 173       7.092  43.994  25.534  1.00 22.13           O
ATOM   1321  CB  SER A 173       8.821  46.056  26.951  1.00 23.74           C
ATOM   1322  OG  SER A 173       9.243  46.705  25.773  1.00 29.00           O
ATOM   1323  N   HIS A 174       9.065  43.646  24.512  1.00 17.75           N
ATOM   1324  CA  HIS A 174       8.492  43.188  23.265  1.00 17.50           C
ATOM   1325  C   HIS A 174       8.600  41.658  23.132  1.00 16.39           C
ATOM   1326  O   HIS A 174       8.197  41.102  22.124  1.00 17.58           O
ATOM   1327  CB  HIS A 174       9.116  43.875  22.050  1.00 17.07           C
ATOM   1328  CG  HIS A 174      10.579  43.533  21.916  1.00 20.56           C
ATOM   1329  ND1 HIS A 174      11.527  43.924  22.837  1.00 21.16           N
ATOM   1330  CD2 HIS A 174      11.226  42.822  20.967  1.00 20.15           C
ATOM   1331  CE1 HIS A 174      12.711  43.476  22.448  1.00 13.95           C
ATOM   1332  NE2 HIS A 174      12.559  42.762  21.333  1.00 18.66           N
ATOM   1333  N   ILE A 175       9.091  41.040  24.204  1.00 19.18           N
ATOM   1334  CA  ILE A 175       9.207  39.573  24.216  1.00 15.87           C
ATOM   1335  C   ILE A 175       8.289  39.008  25.292  1.00 17.27           C
ATOM   1336  O   ILE A 175       8.399  39.307  26.485  1.00 18.00           O
ATOM   1337  CB  ILE A 175      10.648  39.123  24.522  1.00 23.04           C
ATOM   1338  CG1 ILE A 175      11.644  39.643  23.490  1.00 19.39           C
ATOM   1339  CG2 ILE A 175      10.705  37.589  24.597  1.00 17.36           C
ATOM   1340  CD1 ILE A 175      13.104  39.351  23.876  1.00 16.58           C
ATOM   1341  N   HIS A 176       7.338  38.143  24.885  1.00 15.25           N
ATOM   1342  CA  HIS A 176       6.341  37.569  25.775  1.00 18.06           C
ATOM   1343  C   HIS A 176       6.522  36.060  25.891  1.00 17.50           C
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ATOM	1344	O	HIS	A	176	6.411	35.373	24.891	1.00	19.93	O
ATOM	1345	CB	HIS	A	176	4.948	37.913	25.227	1.00	20.20	C
ATOM	1346	CG	HIS	A	176	4.893	39.398	24.933	1.00	17.31	C
ATOM	1347	ND1	HIS	A	176	4.705	40.329	25.945	1.00	23.89	N
ATOM	1348	CD2	HIS	A	176	5.080	40.067	23.785	1.00	16.22	C
ATOM	1349	CE1	HIS	A	176	4.746	41.528	25.369	1.00	19.91	C
ATOM	1350	NE2	HIS	A	176	4.966	41.415	24.080	1.00	17.72	N
ATOM	1351	N	LEU	A	177	6.930	35.639	27.079	1.00	16.15	N
ATOM	1352	CA	LEU	A	177	7.302	34.237	27.266	1.00	20.26	C
ATOM	1353	C	LEU	A	177	6.172	33.394	27.776	1.00	18.87	C
ATOM	1354	O	LEU	A	177	5.507	33.721	28.751	1.00	17.54	O
ATOM	1355	CB	LEU	A	177	8.505	34.179	28.213	1.00	16.68	C
ATOM	1356	CG	LEU	A	177	9.750	34.949	27.759	1.00	20.48	C
ATOM	1357	CD1	LEU	A	177	10.829	34.890	28.838	1.00	23.84	C
ATOM	1358	CD2	LEU	A	177	10.287	34.407	26.443	1.00	19.91	C
ATOM	1359	N	TYR	A	178	5.971	32.234	27.121	1.00	15.13	N
ATOM	1360	CA	TYR	A	178	4.968	31.268	27.522	1.00	16.57	C
ATOM	1361	C	TYR	A	178	5.682	29.949	27.741	1.00	13.83	C
ATOM	1362	O	TYR	A	178	6.202	29.325	26.803	1.00	16.26	O
ATOM	1363	CB	TYR	A	178	3.884	31.164	26.436	1.00	13.81	C
ATOM	1364	CG	TYR	A	178	3.010	32.412	26.288	1.00	14.31	C
ATOM	1365	CD1	TYR	A	178	1.871	32.534	27.089	1.00	13.04	C
ATOM	1366	CD2	TYR	A	178	3.321	33.410	25.402	1.00	14.39	C
ATOM	1367	CE1	TYR	A	178	1.042	33.643	26.958	1.00	13.10	C
ATOM	1368	CE2	TYR	A	178	2.528	34.539	25.279	1.00	14.79	C
ATOM	1369	CZ	TYR	A	178	1.403	34.639	26.063	1.00	16.55	C
ATOM	1370	OH	TYR	A	178	0.641	35.766	25.884	1.00	17.40	O
ATOM	1371	N	LEU	A	179	5.784	29.489	28.974	1.00	13.35	N
ATOM	1372	CA	LEU	A	179	6.462	28.249	29.352	1.00	17.07	C
ATOM	1373	C	LEU	A	179	5.542	27.065	29.143	1.00	19.44	C
ATOM	1374	O	LEU	A	179	4.405	27.017	29.634	1.00	16.44	O
ATOM	1375	CB	LEU	A	179	6.963	28.405	30.803	1.00	16.46	C
ATOM	1376	CG	LEU	A	179	7.666	27.233	31.449	1.00	19.83	C
ATOM	1377	CD1	LEU	A	179	8.937	26.875	30.675	1.00	15.49	C
ATOM	1378	CD2	LEU	A	179	8.015	27.580	32.907	1.00	23.07	C
ATOM	1379	N	ASP	A	180	6.029	26.088	28.354	1.00	14.36	N
ATOM	1380	CA	ASP	A	180	5.125	25.000	27.961	1.00	15.05	C
ATOM	1381	C	ASP	A	180	4.761	24.105	29.111	1.00	13.43	C
ATOM	1382	O	ASP	A	180	5.631	23.795	29.919	1.00	14.07	O
ATOM	1383	CB	ASP	A	180	5.781	24.192	26.800	1.00	12.47	C
ATOM	1384	CG	ASP	A	180	4.684	23.234	26.354	1.00	13.76	C
ATOM	1385	OD1	ASP	A	180	3.794	23.702	25.682	1.00	13.82	O
ATOM	1386	OD2	ASP	A	180	4.713	22.059	26.727	1.00	13.22	O
ATOM	1387	N	VAL	A	181	3.467	23.779	29.265	1.00	13.82	N
ATOM	1388	CA	VAL	A	181	3.027	22.841	30.278	1.00	16.72	C
ATOM	1389	C	VAL	A	181	2.236	21.692	29.648	1.00	15.67	C
ATOM	1390	O	VAL	A	181	1.300	21.117	30.214	1.00	16.61	O
ATOM	1391	CB	VAL	A	181	2.254	23.512	31.436	1.00	15.74	C
ATOM	1392	CG1	VAL	A	181	3.113	24.562	32.107	1.00	16.55	C
ATOM	1393	CG2	VAL	A	181	1.043	24.270	30.879	1.00	14.73	C
ATOM	1394	N	ALA	A	182	2.766	21.112	28.559	1.00	15.84	N
ATOM	1395	CA	ALA	A	182	2.257	19.878	27.954	1.00	11.85	C
ATOM	1396	C	ALA	A	182	0.796	19.975	27.567	1.00	17.64	C
ATOM	1397	O	ALA	A	182	0.425	20.845	26.796	1.00	16.55	O
ATOM	1398	CB	ALA	A	182	2.536	18.728	28.928	1.00	13.37	C
ATOM	1399	N	ASN	A	183	-0.074	19.076	28.056	1.00	15.15	N
ATOM	1400	CA	ASN	A	183	-1.496	19.177	27.691	1.00	16.26	C
ATOM	1401	C	ASN	A	183	-2.265	18.644	28.894	1.00	17.26	C
ATOM	1402	O	ASN	A	183	-1.684	17.994	29.777	1.00	18.17	O

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ATOM   1403  CB  ASN A 183      -1.835  18.454  26.401  1.00 16.35           C
ATOM   1404  CG  ASN A 183      -1.767  16.965  26.559  1.00 17.94           C
ATOM   1405  OD1 ASN A 183      -2.792  16.319  26.797  1.00 16.51           O
ATOM   1406  ND2 ASN A 183      -0.582  16.382  26.436  1.00 18.25           N
ATOM   1407  N   GLY A 184      -3.592  18.844  28.847  1.00 16.86           N
ATOM   1408  CA  GLY A 184      -4.388  18.416  30.015  1.00 19.04           C
ATOM   1409  C   GLY A 184      -4.359  16.935  30.329  1.00 21.08           C
ATOM   1410  O   GLY A 184      -4.483  16.535  31.490  1.00 19.31           O
ATOM   1411  N   GLY A 185      -4.123  16.070  29.349  1.00 15.52           N
ATOM   1412  CA  GLY A 185      -4.026  14.643  29.525  1.00 18.46           C
ATOM   1413  C   GLY A 185      -2.809  14.180  30.305  1.00 17.75           C
ATOM   1414  O   GLY A 185      -2.746  13.069  30.846  1.00 22.14           O
ATOM   1415  N   TRP A 186      -1.764  14.986  30.239  1.00 15.80           N
ATOM   1416  CA  TRP A 186      -0.519  14.664  30.916  1.00 18.17           C
ATOM   1417  C   TRP A 186      -0.515  15.232  32.333  1.00 24.27           C
ATOM   1418  O   TRP A 186      -0.289  14.510  33.294  1.00 23.57           O
ATOM   1419  CB  TRP A 186       0.639  15.315  30.122  1.00 17.51           C
ATOM   1420  CG  TRP A 186       2.016  14.820  30.460  1.00 18.20           C
ATOM   1421  CD1 TRP A 186       2.509  14.350  31.646  1.00 20.95           C
ATOM   1422  CD2 TRP A 186       3.143  14.779  29.546  1.00 15.73           C
ATOM   1423  NE1 TRP A 186       3.840  13.989  31.533  1.00 21.92           N
ATOM   1424  CE2 TRP A 186       4.236  14.248  30.235  1.00 19.99           C
ATOM   1425  CE3 TRP A 186       3.305  15.112  28.191  1.00 20.33           C
ATOM   1426  CZ2 TRP A 186       5.493  14.056  29.657  1.00 22.00           C
ATOM   1427  CZ3 TRP A 186       4.558  14.913  27.629  1.00 20.80           C
ATOM   1428  CH2 TRP A 186       5.640  14.413  28.347  1.00 17.58           C
ATOM   1429  N   LEU A 187      -0.720  16.532  32.461  1.00 19.08           N
ATOM   1430  CA  LEU A 187      -0.550  17.251  33.706  1.00 17.71           C
ATOM   1431  C   LEU A 187      -1.826  17.878  34.279  1.00 24.49           C
ATOM   1432  O   LEU A 187      -1.705  18.631  35.261  1.00 21.87           O
ATOM   1433  CB  LEU A 187       0.449  18.392  33.475  1.00 17.69           C
ATOM   1434  CG  LEU A 187       1.845  17.972  32.991  1.00 19.27           C
ATOM   1435  CD1 LEU A 187       2.755  19.184  32.845  1.00 18.62           C
ATOM   1436  CD2 LEU A 187       2.406  16.956  33.963  1.00 17.99           C
ATOM   1437  N   GLY A 188      -2.936  17.551  33.659  1.00 18.10           N
ATOM   1438  CA  GLY A 188      -4.232  18.107  34.068  1.00 21.65           C
ATOM   1439  C   GLY A 188      -4.939  17.303  35.143  1.00 21.97           C
ATOM   1440  O   GLY A 188      -5.921  17.793  35.701  1.00 24.01           O
ATOM   1441  N   TRP A 189      -4.503  16.086  35.398  1.00 22.20           N
ATOM   1442  CA  TRP A 189      -5.096  15.289  36.469  1.00 22.87           C
ATOM   1443  C   TRP A 189      -4.970  16.007  37.799  1.00 25.04           C
ATOM   1444  O   TRP A 189      -4.080  16.805  38.040  1.00 27.88           O
ATOM   1445  CB  TRP A 189      -4.314  13.975  36.627  1.00 27.16           C
ATOM   1446  CG  TRP A 189      -4.390  13.238  35.316  1.00 22.25           C
ATOM   1447  CD1 TRP A 189      -3.421  13.194  34.350  1.00 25.61           C
ATOM   1448  CD2 TRP A 189      -5.499  12.487  34.827  1.00 29.01           C
ATOM   1449  NE1 TRP A 189      -3.871  12.429  33.293  1.00 23.98           N
ATOM   1450  CE2 TRP A 189      -5.137  11.991  33.560  1.00 28.33           C
ATOM   1451  CE3 TRP A 189      -6.778  12.198  35.343  1.00 27.34           C
ATOM   1452  CZ2 TRP A 189      -5.994  11.197  32.797  1.00 25.20           C
ATOM   1453  CZ3 TRP A 189      -7.609  11.402  34.572  1.00 36.57           C
ATOM   1454  CH2 TRP A 189      -7.230  10.916  33.313  1.00 33.11           C
ATOM   1455  N   ALA A 190      -5.857  15.619  38.712  1.00 29.58           N
ATOM   1456  CA  ALA A 190      -5.823  16.164  40.069  1.00 23.81           C
ATOM   1457  C   ALA A 190      -4.469  16.087  40.736  1.00 21.28           C
ATOM   1458  O   ALA A 190      -3.950  17.088  41.228  1.00 31.06           O
ATOM   1459  CB  ALA A 190      -6.849  15.334  40.862  1.00 29.66           C
ATOM   1460  N   ASP A 191      -3.855  14.912  40.801  1.00 23.12           N
ATOM   1461  CA  ASP A 191      -2.557  14.712  41.428  1.00 27.43           C
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ATOM   1462  C   ASP A 191      -1.385  15.277  40.632  1.00 25.12           C
ATOM   1463  O   ASP A 191      -0.266  15.091  41.114  1.00 27.19           O
ATOM   1464  CB  ASP A 191      -2.325  13.225  41.691  1.00 32.82           C
ATOM   1465  CG  ASP A 191      -1.922  12.405  40.483  1.00 39.62           C
ATOM   1466  OD1 ASP A 191      -2.175  12.787  39.317  1.00 36.24           O
ATOM   1467  OD2 ASP A 191      -1.324  11.319  40.701  1.00 38.36           O
ATOM   1468  N   LYS A 192      -1.604  15.905  39.475  1.00 26.92           N
ATOM   1469  CA  LYS A 192      -0.546  16.487  38.698  1.00 24.87           C
ATOM   1470  C   LYS A 192      -0.518  18.003  38.637  1.00 24.18           C
ATOM   1471  O   LYS A 192       0.548  18.530  38.317  1.00 23.32           O
ATOM   1472  CB  LYS A 192      -0.617  16.067  37.212  1.00 25.77           C
ATOM   1473  CG  LYS A 192      -0.373  14.587  36.992  1.00 29.05           C
ATOM   1474  CD  LYS A 192       1.095  14.275  37.240  1.00 27.96           C
ATOM   1475  CE  LYS A 192       1.222  13.128  38.227  1.00 45.28           C
ATOM   1476  NZ  LYS A 192       0.408  11.964  37.780  1.00 39.91           N
ATOM   1477  N   LEU A 193      -1.596  18.697  38.966  1.00 25.73           N
ATOM   1478  CA  LEU A 193      -1.610  20.157  38.900  1.00 21.89           C
ATOM   1479  C   LEU A 193      -0.630  20.856  39.818  1.00 25.66           C
ATOM   1480  O   LEU A 193      -0.012  21.880  39.460  1.00 21.93           O
ATOM   1481  CB  LEU A 193      -3.027  20.671  39.198  1.00 28.06           C
ATOM   1482  CG  LEU A 193      -4.184  20.155  38.357  1.00 30.24           C
ATOM   1483  CD1 LEU A 193      -5.493  20.353  39.123  1.00 29.65           C
ATOM   1484  CD2 LEU A 193      -4.248  20.844  37.006  1.00 29.18           C
ATOM   1485  N   GLU A 194      -0.506  20.349  41.057  1.00 25.45           N
ATOM   1486  CA  GLU A 194       0.444  21.002  41.980  1.00 28.77           C
ATOM   1487  C   GLU A 194       1.888  20.693  41.663  1.00 23.06           C
ATOM   1488  O   GLU A 194       2.726  21.586  41.561  1.00 24.93           O
ATOM   1489  CB  GLU A 194       0.116  20.784  43.452  1.00 29.05           C
ATOM   1490  CG  GLU A 194      -1.144  21.554  43.846  1.00 30.23           C
ATOM   1491  CD  GLU A 194      -0.983  23.063  43.816  1.00 25.96           C
ATOM   1492  OE1 GLU A 194       0.158  23.580  43.710  1.00 28.60           O
ATOM   1493  OE2 GLU A 194      -2.043  23.728  43.906  1.00 25.23           O
ATOM   1494  N   PRO A 195       2.227  19.456  41.360  1.00 23.57           N
ATOM   1495  CA  PRO A 195       3.575  19.085  40.953  1.00 22.27           C
ATOM   1496  C   PRO A 195       3.960  19.921  39.737  1.00 24.12           C
ATOM   1497  O   PRO A 195       5.112  20.339  39.663  1.00 26.09           O
ATOM   1498  CB  PRO A 195       3.555  17.581  40.620  1.00 26.84           C
ATOM   1499  CG  PRO A 195       2.402  17.142  41.492  1.00 27.05           C
ATOM   1500  CD  PRO A 195       1.377  18.276  41.509  1.00 23.97           C
ATOM   1501  N   THR A 196       3.011  20.243  38.851  1.00 24.28           N
ATOM   1502  CA  THR A 196       3.316  21.124  37.717  1.00 25.48           C
ATOM   1503  C   THR A 196       3.610  22.543  38.149  1.00 23.30           C
ATOM   1504  O   THR A 196       4.576  23.199  37.736  1.00 25.84           O
ATOM   1505  CB  THR A 196       2.137  21.128  36.715  1.00 20.97           C
ATOM   1506  OG1 THR A 196       1.985  19.758  36.314  1.00 28.42           O
ATOM   1507  CG2 THR A 196       2.446  21.981  35.505  1.00 24.74           C
ATOM   1508  N   ALA A 197       2.802  23.097  39.073  1.00 22.38           N
ATOM   1509  CA  ALA A 197       3.073  24.439  39.568  1.00 18.61           C
ATOM   1510  C   ALA A 197       4.376  24.556  40.331  1.00 17.24           C
ATOM   1511  O   ALA A 197       5.035  25.590  40.273  1.00 21.98           O
ATOM   1512  CB  ALA A 197       1.914  24.910  40.464  1.00 22.57           C
ATOM   1513  N   GLN A 198       4.751  23.492  41.045  1.00 25.96           N
ATOM   1514  CA  GLN A 198       5.985  23.455  41.814  1.00 24.97           C
ATOM   1515  C   GLN A 198       7.186  23.526  40.870  1.00 24.11           C
ATOM   1516  O   GLN A 198       8.171  24.217  41.114  1.00 25.56           O
ATOM   1517  CB  GLN A 198       6.050  22.185  42.683  1.00 28.98           C
ATOM   1518  CG  GLN A 198       7.336  22.134  43.531  1.00 24.27           C
ATOM   1519  CD  GLN A 198       7.314  23.356  44.454  1.00 34.76           C
ATOM   1520  OE1 GLN A 198       6.362  23.450  45.232  1.00 36.44           O
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ATOM   1521  NE2 GLN A 198       8.272  24.266  44.352  1.00 38.30           N
ATOM   1522  N   GLU A 199       7.066  22.768  39.768  1.00 25.95           N
ATOM   1523  CA  GLU A 199       8.129  22.788  38.753  1.00 25.16           C
ATOM   1524  C   GLU A 199       8.329  24.172  38.183  1.00 21.81           C
ATOM   1525  O   GLU A 199       9.475  24.628  38.023  1.00 26.10           O
ATOM   1526  CB  GLU A 199       7.821  21.778  37.656  1.00 27.77           C
ATOM   1527  CG  GLU A 199       9.018  21.058  37.068  1.00 32.81           C
ATOM   1528  CD  GLU A 199      10.146  20.739  38.020  1.00 36.59           C
ATOM   1529  OE1 GLU A 199       9.946  20.366  39.186  1.00 33.97           O
ATOM   1530  OE2 GLU A 199      11.309  20.869  37.542  1.00 37.28           O
ATOM   1531  N   VAL A 200       7.248  24.875  37.829  1.00 21.28           N
ATOM   1532  CA  VAL A 200       7.337  26.244  37.348  1.00 17.50           C
ATOM   1533  C   VAL A 200       7.929  27.150  38.425  1.00 18.55           C
ATOM   1534  O   VAL A 200       8.756  27.994  38.109  1.00 22.64           O
ATOM   1535  CB  VAL A 200       5.925  26.698  36.913  1.00 20.34           C
ATOM   1536  CG1 VAL A 200       5.890  28.166  36.596  1.00 18.70           C
ATOM   1537  CG2 VAL A 200       5.443  25.853  35.727  1.00 20.27           C
ATOM   1538  N   ALA A 201       7.481  26.973  39.688  1.00 22.75           N
ATOM   1539  CA  ALA A 201       8.056  27.851  40.711  1.00 23.99           C
ATOM   1540  C   ALA A 201       9.574  27.628  40.801  1.00 21.12           C
ATOM   1541  O   ALA A 201      10.304  28.619  40.901  1.00 25.72           O
ATOM   1542  CB  ALA A 201       7.402  27.722  42.071  1.00 31.11           C
ATOM   1543  N   THR A 202      10.037  26.397  40.827  1.00 21.45           N
ATOM   1544  CA  THR A 202      11.468  26.099  40.906  1.00 26.32           C
ATOM   1545  C   THR A 202      12.229  26.681  39.733  1.00 26.11           C
ATOM   1546  O   THR A 202      13.303  27.249  39.932  1.00 27.66           O
ATOM   1547  CB  THR A 202      11.678  24.581  40.980  1.00 26.18           C
ATOM   1548  OG1 THR A 202      11.067  24.107  42.183  1.00 30.40           O
ATOM   1549  CG2 THR A 202      13.147  24.200  40.939  1.00 27.67           C
ATOM   1550  N   ILE A 203      11.723  26.511  38.504  1.00 24.82           N
ATOM   1551  CA  ILE A 203      12.363  27.083  37.334  1.00 21.56           C
ATOM   1552  C   ILE A 203      12.438  28.596  37.366  1.00 24.19           C
ATOM   1553  O   ILE A 203      13.453  29.168  36.940  1.00 25.72           O
ATOM   1554  CB  ILE A 203      11.645  26.649  36.030  1.00 21.53           C
ATOM   1555  CG1 ILE A 203      12.036  25.183  35.809  1.00 27.33           C
ATOM   1556  CG2 ILE A 203      11.963  27.516  34.829  1.00 21.78           C
ATOM   1557  CD1 ILE A 203      11.091  24.441  34.901  1.00 23.73           C
ATOM   1558  N   LEU A 204      11.384  29.267  37.808  1.00 26.14           N
ATOM   1559  CA  LEU A 204      11.387  30.726  37.873  1.00 24.06           C
ATOM   1560  C   LEU A 204      12.383  31.235  38.912  1.00 24.89           C
ATOM   1561  O   LEU A 204      13.069  32.248  38.691  1.00 28.09           O
ATOM   1562  CB  LEU A 204       9.969  31.235  38.164  1.00 26.98           C
ATOM   1563  CG  LEU A 204       9.041  31.157  36.934  1.00 24.81           C
ATOM   1564  CD1 LEU A 204       7.638  31.604  37.285  1.00 22.92           C
ATOM   1565  CD2 LEU A 204       9.587  32.042  35.826  1.00 30.35           C
ATOM   1566  N   GLN A 205      12.512  30.521  40.037  1.00 28.00           N
ATOM   1567  CA  GLN A 205      13.533  30.926  41.015  1.00 29.64           C
ATOM   1568  C   GLN A 205      14.920  30.924  40.374  1.00 33.03           C
ATOM   1569  O   GLN A 205      15.684  31.869  40.569  1.00 33.55           O
ATOM   1570  CB  GLN A 205      13.567  30.012  42.225  1.00 31.06           C
ATOM   1571  CG  GLN A 205      12.277  29.942  43.023  1.00 40.96           C
ATOM   1572  CD  GLN A 205      12.403  28.925  44.147  1.00 53.67           C
ATOM   1573  OE1 GLN A 205      11.542  28.067  44.360  1.00 58.84           O
ATOM   1574  NE2 GLN A 205      13.509  29.019  44.879  1.00 57.55           N
ATOM   1575  N   LYS A 206      15.250  29.884  39.608  1.00 31.53           N
ATOM   1576  CA  LYS A 206      16.521  29.777  38.912  1.00 30.90           C
ATOM   1577  C   LYS A 206      16.725  30.823  37.838  1.00 28.64           C
ATOM   1578  O   LYS A 206      17.869  31.293  37.679  1.00 35.87           O
ATOM   1579  CB  LYS A 206      16.679  28.369  38.307  1.00 30.49           C
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ATOM   1580  CG  LYS A 206      16.409  27.316  39.361  1.00 32.33           C
ATOM   1581  CD  LYS A 206      17.005  25.969  39.023  1.00 31.07           C
ATOM   1582  CE  LYS A 206      16.472  24.899  39.969  1.00 41.01           C
ATOM   1583  NZ  LYS A 206      16.780  25.229  41.395  1.00 49.48           N
ATOM   1584  N   ALA A 207      15.684  31.325  37.196  1.00 25.35           N
ATOM   1585  CA  ALA A 207      15.793  32.401  36.215  1.00 25.49           C
ATOM   1586  C   ALA A 207      16.070  33.719  36.952  1.00 28.60           C
ATOM   1587  O   ALA A 207      16.637  34.636  36.375  1.00 33.48           O
ATOM   1588  CB  ALA A 207      14.551  32.572  35.347  1.00 21.82           C
ATOM   1589  N   GLY A 208      15.672  33.737  38.228  1.00 24.19           N
ATOM   1590  CA  GLY A 208      16.054  34.891  39.047  1.00 29.70           C
ATOM   1591  C   GLY A 208      14.854  35.556  39.680  1.00 34.18           C
ATOM   1592  O   GLY A 208      13.713  35.180  39.440  1.00 34.37           O
ATOM   1593  N   ASN A 209      15.136  36.575  40.487  1.00 36.06           N
ATOM   1594  CA  ASN A 209      14.093  37.337  41.139  1.00 42.26           C
ATOM   1595  C   ASN A 209      13.351  38.247  40.168  1.00 37.42           C
ATOM   1596  O   ASN A 209      12.116  38.192  40.188  1.00 44.08           O
ATOM   1597  CB  ASN A 209      14.620  38.188  42.294  1.00 48.61           C
ATOM   1598  CG  ASN A 209      15.196  37.459  43.479  1.00 54.89           C
ATOM   1599  OD1 ASN A 209      15.546  38.114  44.474  1.00 61.55           O
ATOM   1600  ND2 ASN A 209      15.339  36.141  43.424  1.00 57.53           N
ATOM   1601  N   ASN A 210      13.994  39.030  39.320  1.00 38.97           N
ATOM   1602  CA  ASN A 210      13.295  39.964  38.445  1.00 39.96           C
ATOM   1603  C   ASN A 210      12.741  39.332  37.170  1.00 38.36           C
ATOM   1604  O   ASN A 210      12.022  39.980  36.417  1.00 42.09           O
ATOM   1605  CB  ASN A 210      14.158  41.176  38.091  1.00 39.67           C
ATOM   1606  CG  ASN A 210      14.897  41.131  36.777  1.00 51.11           C
ATOM   1607  OD1 ASN A 210      15.937  40.479  36.659  1.00 54.23           O
ATOM   1608  ND2 ASN A 210      14.400  41.823  35.755  1.00 48.58           N
ATOM   1609  N   ALA A 211      13.091  38.082  36.921  1.00 40.09           N
ATOM   1610  CA  ALA A 211      12.648  37.337  35.764  1.00 33.43           C
ATOM   1611  C   ALA A 211      11.135  37.146  35.739  1.00 31.19           C
ATOM   1612  O   ALA A 211      10.524  36.870  36.773  1.00 34.58           O
ATOM   1613  CB  ALA A 211      13.297  35.955  35.811  1.00 28.11           C
ATOM   1614  N   LYS A 212      10.554  37.288  34.545  1.00 25.79           N
ATOM   1615  CA  LYS A 212       9.120  36.999  34.492  1.00 24.00           C
ATOM   1616  C   LYS A 212       8.812  36.212  33.208  1.00 24.95           C
ATOM   1617  O   LYS A 212       9.542  36.287  32.230  1.00 22.45           O
ATOM   1618  CB  LYS A 212       8.174  38.183  34.496  1.00 32.81           C
ATOM   1619  CG  LYS A 212       8.614  39.486  33.883  1.00 43.81           C
ATOM   1620  CD  LYS A 212       9.337  40.299  34.942  1.00 53.00           C
ATOM   1621  CE  LYS A 212       8.469  41.362  35.589  1.00 60.57           C
ATOM   1622  NZ  LYS A 212       9.336  42.506  36.020  1.00 61.75           N
ATOM   1623  N   ILE A 213       7.648  35.577  33.278  1.00 20.62           N
ATOM   1624  CA  ILE A 213       7.049  34.967  32.109  1.00 19.54           C
ATOM   1625  C   ILE A 213       5.610  35.517  32.058  1.00 22.44           C
ATOM   1626  O   ILE A 213       5.102  35.955  33.109  1.00 19.92           O
ATOM   1627  CB  ILE A 213       7.008  33.436  32.102  1.00 20.33           C
ATOM   1628  CG1 ILE A 213       6.183  32.871  33.255  1.00 17.85           C
ATOM   1629  CG2 ILE A 213       8.462  32.924  32.079  1.00 19.41           C
ATOM   1630  CD1 ILE A 213       6.300  31.354  33.414  1.00 17.47           C
ATOM   1631  N   ARG A 214       5.010  35.503  30.868  1.00 17.88           N
ATOM   1632  CA  ARG A 214       3.607  35.940  30.819  1.00 18.46           C
ATOM   1633  C   ARG A 214       2.685  34.838  31.295  1.00 21.26           C
ATOM   1634  O   ARG A 214       1.614  35.037  31.864  1.00 17.92           O
ATOM   1635  CB  ARG A 214       3.248  36.367  29.389  1.00 19.56           C
ATOM   1636  CG  ARG A 214       1.749  36.458  29.110  1.00 23.23           C
ATOM   1637  CD  ARG A 214       1.110  37.594  29.907  1.00 18.30           C
ATOM   1638  NE  ARG A 214      -0.304  37.719  29.494  1.00 17.36           N
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	ATOM	1639	CZ	ARG	A	214	-1.084	38.648	30.077	1.00 29.29	C
	ATOM	1640	NH1	ARG	A	214	-0.615	39.444	31.035	1.00 30.58	N
	ATOM	1641	NH2	ARG	A	214	-2.352	38.736	29.692	1.00 27.97	N
	ATOM	1642	N	GLY	A	215	3.090	33.592	31.036	1.00 18.68	N
5	ATOM	1643	CA	GLY	A	215	2.303	32.450	31.353	1.00 17.92	C
	ATOM	1644	C	GLY	A	215	2.783	31.206	30.594	1.00 17.40	C
	ATOM	1645	O	GLY	A	215	3.971	30.919	30.664	1.00 16.91	O
	ATOM	1646	N	PHE	A	216	1.819	30.432	30.117	1.00 15.76	N
	ATOM	1647	CA	PHE	A	216	2.091	29.062	29.685	1.00 15.22	C
10	ATOM	1648	C	PHE	A	216	1.536	28.700	28.315	1.00 21.72	C
	ATOM	1649	O	PHE	A	216	0.615	29.393	27.889	1.00 16.93	O
	ATOM	1650	CB	PHE	A	216	1.454	28.052	30.706	1.00 17.19	C
	ATOM	1651	CG	PHE	A	216	1.805	28.479	32.128	1.00 18.17	C
	ATOM	1652	CD1	PHE	A	216	3.078	28.261	32.605	1.00 18.71	C
15	ATOM	1653	CD2	PHE	A	216	0.880	29.187	32.900	1.00 15.71	C
	ATOM	1654	CE1	PHE	A	216	3.463	28.695	33.864	1.00 22.37	C
	ATOM	1655	CE2	PHE	A	216	1.266	29.606	34.157	1.00 19.25	C
	ATOM	1656	CZ	PHE	A	216	2.536	29.379	34.638	1.00 19.49	C
	ATOM	1657	N	SER	A	217	2.008	27.589	27.734	1.00 15.56	N
20	ATOM	1658	CA	SER	A	217	1.369	27.131	26.496	1.00 17.02	C
	ATOM	1659	C	SER	A	217	0.904	25.698	26.741	1.00 14.93	C
	ATOM	1660	O	SER	A	217	1.472	25.017	27.598	1.00 15.08	O
	ATOM	1661	CB	SER	A	217	2.312	27.206	25.291	1.00 21.00	C
	ATOM	1662	OG	SER	A	217	3.536	26.478	25.506	1.00 14.08	O
25	ATOM	1663	N	SER	A	218	-0.111	25.257	25.994	1.00 12.72	N
	ATOM	1664	CA	SER	A	218	-0.578	23.873	26.150	1.00 13.00	C
	ATOM	1665	C	SER	A	218	-1.173	23.379	24.842	1.00 13.14	C
	ATOM	1666	O	SER	A	218	-1.507	24.158	23.945	1.00 13.35	O
	ATOM	1667	CB	SER	A	218	-1.578	23.773	27.295	1.00 20.14	C
30	ATOM	1668	OG	ASER	A	218	-2.810	24.361	26.895	0.50 14.84	O
	ATOM	1669	OG	BSER	A	218	-2.018	22.467	27.590	0.50 17.53	O
	ATOM	1670	N	ASN	A	219	-1.256	22.045	24.761	1.00 13.03	N
	ATOM	1671	CA	ASN	A	219	-1.784	21.338	23.606	1.00 11.66	C
	ATOM	1672	C	ASN	A	219	-0.866	21.452	22.392	1.00 14.11	C
35	ATOM	1673	O	ASN	A	219	-1.353	21.126	21.273	1.00 14.12	O
	ATOM	1674	CB	ASN	A	219	-3.201	21.817	23.223	1.00 14.10	C
	ATOM	1675	CG	ASN	A	219	-4.080	20.725	22.613	1.00 17.99	C
	ATOM	1676	OD1	ASN	A	219	-4.037	19.626	23.166	1.00 15.33	O
	ATOM	1677	ND2	ASN	A	219	-4.815	21.094	21.565	1.00 17.07	N
40	ATOM	1678	N	VAL	A	220	0.368	21.934	22.552	1.00 13.71	N
	ATOM	1679	CA	VAL	A	220	1.247	22.075	21.386	1.00 11.95	C
	ATOM	1680	C	VAL	A	220	1.538	20.682	20.846	1.00 13.76	C
	ATOM	1681	O	VAL	A	220	1.934	19.740	21.510	1.00 13.52	O
	ATOM	1682	CB	VAL	A	220	2.556	22.805	21.735	1.00 10.00	C
45	ATOM	1683	CG1	VAL	A	220	3.448	22.783	20.485	1.00 13.46	C
	ATOM	1684	CG2	VAL	A	220	2.220	24.204	22.233	1.00 14.70	C
	ATOM	1685	N	SER	A	221	1.255	20.499	19.559	1.00 11.96	N
	ATOM	1686	CA	SER	A	221	1.341	19.261	18.833	1.00 14.66	C
	ATOM	1687	C	SER	A	221	0.313	18.231	19.263	1.00 12.51	C
50	ATOM	1688	O	SER	A	221	0.439	17.128	18.744	1.00 16.81	O
	ATOM	1689	CB	SER	A	221	2.723	18.593	18.901	1.00 14.72	C
	ATOM	1690	OG	SER	A	221	3.724	19.605	18.684	1.00 12.62	O
	ATOM	1691	N	ASN	A	222	-0.631	18.601	20.110	1.00 13.47	N
	ATOM	1692	CA	ASN	A	222	-1.625	17.642	20.572	1.00 14.48	C
55	ATOM	1693	C	ASN	A	222	-2.925	17.979	19.829	1.00 12.73	C
	ATOM	1694	O	ASN	A	222	-2.928	18.650	18.818	1.00 13.89	O
	ATOM	1695	CB	ASN	A	222	-1.770	17.526	22.086	1.00 13.91	C
	ATOM	1696	CG	ASN	A	222	-2.016	16.103	22.503	1.00 19.90	C
	ATOM	1697	OD1	ASN	A	222	-3.127	15.605	22.333	1.00 19.28	O

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ATOM   1698  ND2 ASN A 222      -1.003  15.406  23.038  1.00 18.83           N
ATOM   1699  N   TYR A 223      -3.966  17.275  20.257  1.00 13.32           N
ATOM   1700  CA  TYR A 223      -5.237  17.270  19.551  1.00 11.77           C
ATOM   1701  C   TYR A 223      -6.437  17.515  20.460  1.00 15.77           C
ATOM   1702  O   TYR A 223      -7.578  17.316  19.988  1.00 16.62           O
ATOM   1703  CB  TYR A 223      -5.372  15.864  18.943  1.00 15.06           C
ATOM   1704  CG  TYR A 223      -4.199  15.350  18.137  1.00 15.92           C
ATOM   1705  CD1 TYR A 223      -3.132  14.677  18.750  1.00 15.93           C
ATOM   1706  CD2 TYR A 223      -4.146  15.572  16.762  1.00 16.14           C
ATOM   1707  CE1 TYR A 223      -2.060  14.243  17.988  1.00 15.58           C
ATOM   1708  CE2 TYR A 223      -3.077  15.117  15.999  1.00 17.85           C
ATOM   1709  CZ  TYR A 223      -2.047  14.465  16.639  1.00 16.41           C
ATOM   1710  OH  TYR A 223      -0.997  13.959  15.898  1.00 19.26           O
ATOM   1711  N   ASN A 224      -6.198  17.896  21.713  1.00 13.31           N
ATOM   1712  CA  ASN A 224      -7.316  18.118  22.631  1.00 14.52           C
ATOM   1713  C   ASN A 224      -8.139  19.326  22.186  1.00 16.01           C
ATOM   1714  O   ASN A 224      -7.654  20.246  21.549  1.00 16.80           O
ATOM   1715  CB  ASN A 224      -6.786  18.372  24.027  1.00 13.57           C
ATOM   1716  CG  ASN A 224      -5.958  17.284  24.658  1.00 12.50           C
ATOM   1717  OD1 ASN A 224      -6.099  16.139  24.245  1.00 19.32           O
ATOM   1718  ND2 ASN A 224      -5.140  17.615  25.660  1.00 16.34           N
ATOM   1719  N   PRO A 225      -9.451  19.241  22.399  1.00 17.76           N
ATOM   1720  CA  PRO A 225     -10.332  20.344  22.059  1.00 14.38           C
ATOM   1721  C   PRO A 225     -10.173  21.441  23.092  1.00 18.93           C
ATOM   1722  O   PRO A 225      -9.865  21.169  24.250  1.00 16.45           O
ATOM   1723  CB  PRO A 225     -11.751  19.727  22.146  1.00 17.67           C
ATOM   1724  CG  PRO A 225     -11.529  18.670  23.188  1.00 20.92           C
ATOM   1725  CD  PRO A 225     -10.084  18.178  23.153  1.00 17.10           C
ATOM   1726  N   TYR A 226     -10.328  22.677  22.638  1.00 21.84           N
ATOM   1727  CA  TYR A 226     -10.285  23.838  23.506  1.00 18.19           C
ATOM   1728  C   TYR A 226     -11.472  23.772  24.472  1.00 19.97           C
ATOM   1729  O   TYR A 226     -11.307  23.726  25.676  1.00 21.67           O
ATOM   1730  CB  TYR A 226     -10.317  25.144  22.709  1.00 14.39           C
ATOM   1731  CG  TYR A 226     -10.388  26.355  23.619  1.00 17.51           C
ATOM   1732  CD1 TYR A 226      -9.335  26.691  24.448  1.00 21.80           C
ATOM   1733  CD2 TYR A 226     -11.509  27.164  23.645  1.00 22.13           C
ATOM   1734  CE1 TYR A 226      -9.367  27.780  25.297  1.00 25.82           C
ATOM   1735  CE2 TYR A 226     -11.561  28.263  24.486  1.00 24.30           C
ATOM   1736  CZ  TYR A 226     -10.503  28.573  25.303  1.00 23.10           C
ATOM   1737  OH  TYR A 226     -10.543  29.646  26.149  1.00 26.30           O
ATOM   1738  N   SER A 227     -12.699  23.702  23.944  1.00 23.66           N
ATOM   1739  CA  SER A 227     -13.857  23.741  24.842  1.00 24.42           C
ATOM   1740  C   SER A 227     -14.978  22.828  24.340  1.00 23.09           C
ATOM   1741  O   SER A 227     -15.376  23.033  23.193  1.00 29.17           O
ATOM   1742  CB  SER A 227     -14.383  25.186  24.890  1.00 25.47           C
ATOM   1743  OG  SER A 227     -15.470  25.316  25.798  1.00 37.46           O
ATOM   1744  N   THR A 228     -15.357  21.875  25.167  1.00 27.13           N
ATOM   1745  CA  THR A 228     -16.464  21.001  24.769  1.00 28.02           C
ATOM   1746  C   THR A 228     -17.186  20.456  25.988  1.00 23.08           C
ATOM   1747  O   THR A 228     -16.696  20.174  27.071  1.00 27.84           O
ATOM   1748  CB  THR A 228     -16.068  19.880  23.804  1.00 33.27           C
ATOM   1749  OG1 THR A 228     -17.198  18.986  23.652  1.00 35.88           O
ATOM   1750  CG2 THR A 228     -14.932  19.033  24.316  1.00 25.38           C
ATOM   1751  N   SER A 229     -18.506  20.266  25.777  1.00 29.62           N
ATOM   1752  CA  SER A 229     -19.376  19.714  26.794  1.00 24.79           C
ATOM   1753  C   SER A 229     -19.466  18.198  26.648  1.00 30.28           C
ATOM   1754  O   SER A 229     -20.122  17.514  27.430  1.00 31.44           O
ATOM   1755  CB  SER A 229     -20.804  20.261  26.747  1.00 29.37           C
ATOM   1756  OG  SER A 229     -21.203  20.465  25.408  1.00 39.50           O
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	ATOM	1757	N	ASN	A	230	-18.810	17.654	25.621	1.00	25.35	N
	ATOM	1758	CA	ASN	A	230	-18.765	16.231	25.359	1.00	32.28	C
	ATOM	1759	C	ASN	A	230	-17.358	15.680	25.188	1.00	30.97	C
	ATOM	1760	O	ASN	A	230	-16.998	15.188	24.113	1.00	30.41	O
5	ATOM	1761	CB	ASN	A	230	-19.544	15.958	24.037	1.00	32.54	C
	ATOM	1762	CG	ASN	A	230	-20.620	16.961	23.684	1.00	43.39	C
	ATOM	1763	OD1	ASN	A	230	-21.700	16.950	24.292	1.00	34.12	O
	ATOM	1764	ND2	ASN	A	230	-20.364	17.870	22.742	1.00	41.60	N
	ATOM	1765	N	PRO	A	231	-16.512	15.734	26.199	1.00	25.90	N
10	ATOM	1766	CA	PRO	A	231	-15.149	15.229	26.098	1.00	27.71	C
	ATOM	1767	C	PRO	A	231	-15.155	13.714	26.028	1.00	30.87	C
	ATOM	1768	O	PRO	A	231	-16.009	12.988	26.547	1.00	30.76	O
	ATOM	1769	CB	PRO	A	231	-14.382	15.655	27.361	1.00	24.52	C
	ATOM	1770	CG	PRO	A	231	-15.543	15.819	28.321	1.00	30.64	C
15	ATOM	1771	CD	PRO	A	231	-16.762	16.264	27.541	1.00	27.64	C
	ATOM	1772	N	PRO	A	232	-14.125	13.202	25.384	1.00	30.58	N
	ATOM	1773	CA	PRO	A	232	-13.915	11.771	25.232	1.00	29.59	C
	ATOM	1774	C	PRO	A	232	-13.958	11.072	26.562	1.00	24.88	C
	ATOM	1775	O	PRO	A	232	-13.516	11.585	27.600	1.00	26.56	O
20	ATOM	1776	CB	PRO	A	232	-12.484	11.657	24.628	1.00	30.65	C
	ATOM	1777	CG	PRO	A	232	-12.437	12.951	23.845	1.00	27.71	C
	ATOM	1778	CD	PRO	A	232	-13.073	14.007	24.739	1.00	33.43	C
	ATOM	1779	N	PRO	A	233	-14.455	9.840	26.595	1.00	31.50	N
	ATOM	1780	CA	PRO	A	233	-14.537	8.982	27.755	1.00	30.02	C
25	ATOM	1781	C	PRO	A	233	-13.271	8.784	28.549	1.00	31.77	C
	ATOM	1782	O	PRO	A	233	-13.309	8.664	29.766	1.00	36.82	O
	ATOM	1783	CB	PRO	A	233	-14.946	7.570	27.272	1.00	33.21	C
	ATOM	1784	CG	PRO	A	233	-15.369	7.806	25.859	1.00	35.54	C
	ATOM	1785	CD	PRO	A	233	-14.998	9.195	25.395	1.00	31.97	C
30	ATOM	1786	N	TYR	A	234	-12.109	8.784	27.890	1.00	31.90	N
	ATOM	1787	CA	TYR	A	234	-10.829	8.611	28.542	1.00	29.83	C
	ATOM	1788	C	TYR	A	234	-10.450	9.783	29.436	1.00	25.38	C
	ATOM	1789	O	TYR	A	234	-9.515	9.662	30.251	1.00	31.82	O
	ATOM	1790	CB	TYR	A	234	-9.798	8.250	27.477	1.00	30.08	C
35	ATOM	1791	CG	TYR	A	234	-9.519	9.265	26.400	1.00	28.08	C
	ATOM	1792	CD1	TYR	A	234	-9.099	10.543	26.733	1.00	26.39	C
	ATOM	1793	CD2	TYR	A	234	-9.635	8.948	25.056	1.00	25.60	C
	ATOM	1794	CE1	TYR	A	234	-8.811	11.452	25.745	1.00	20.54	C
	ATOM	1795	CE2	TYR	A	234	-9.363	9.872	24.060	1.00	27.19	C
40	ATOM	1796	CZ	TYR	A	234	-8.934	11.124	24.427	1.00	21.27	C
	ATOM	1797	OH	TYR	A	234	-8.645	12.095	23.490	1.00	26.71	O
	ATOM	1798	N	THR	A	235	-11.182	10.888	29.339	1.00	22.74	N
	ATOM	1799	CA	THR	A	235	-10.999	12.048	30.204	1.00	25.50	C
	ATOM	1800	C	THR	A	235	-11.837	11.912	31.486	1.00	26.78	C
45	ATOM	1801	O	THR	A	235	-11.832	12.804	32.346	1.00	32.19	O
	ATOM	1802	CB	THR	A	235	-11.370	13.374	29.533	1.00	28.11	C
	ATOM	1803	OG1	THR	A	235	-12.800	13.416	29.380	1.00	24.65	O
	ATOM	1804	CG2	THR	A	235	-10.745	13.554	28.158	1.00	28.48	C
	ATOM	1805	N	SER	A	236	-12.535	10.793	31.673	1.00	31.61	N
50	ATOM	1806	CA	SER	A	236	-13.313	10.558	32.886	1.00	31.99	C
	ATOM	1807	C	SER	A	236	-12.412	10.540	34.115	1.00	32.80	C
	ATOM	1808	O	SER	A	236	-11.325	9.955	34.100	1.00	36.29	O
	ATOM	1809	CB	SER	A	236	-14.079	9.222	32.787	1.00	35.41	C
	ATOM	1810	OG	SER	A	236	-15.443	9.535	32.572	1.00	42.20	O
55	ATOM	1811	N	GLY	A	237	-12.805	11.299	35.139	1.00	34.05	N
	ATOM	1812	CA	GLY	A	237	-12.009	11.406	36.358	1.00	38.66	C
	ATOM	1813	C	GLY	A	237	-11.021	12.566	36.291	1.00	32.49	C
	ATOM	1814	O	GLY	A	237	-10.372	12.866	37.294	1.00	36.66	O
	ATOM	1815	N	SER	A	238	-10.896	13.223	35.135	1.00	29.05	N

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ATOM   1816  CA  SER A 238      -9.947  14.337  35.082  1.00 24.29           C
ATOM   1817  C   SER A 238     -10.699  15.634  35.256  1.00 20.53           C
ATOM   1818  O   SER A 238     -11.716  15.841  34.600  1.00 24.25           O
ATOM   1819  CB  SER A 238      -9.226  14.413  33.733  1.00 32.02           C
ATOM   1820  OG  SER A 238      -8.667  15.717  33.584  1.00 28.04           O
ATOM   1821  N   PRO A 239     -10.147  16.536  36.060  1.00 21.54           N
ATOM   1822  CA  PRO A 239     -10.693  17.874  36.238  1.00 18.57           C
ATOM   1823  C   PRO A 239     -10.376  18.806  35.075  1.00 22.82           C
ATOM   1824  O   PRO A 239     -10.899  19.905  34.875  1.00 23.72           O
ATOM   1825  CB  PRO A 239      -9.979  18.447  37.486  1.00 24.85           C
ATOM   1826  CG  PRO A 239      -8.670  17.715  37.418  1.00 23.95           C
ATOM   1827  CD  PRO A 239      -8.920  16.341  36.812  1.00 25.04           C
ATOM   1828  N   SER A 240      -9.561  18.346  34.115  1.00 22.32           N
ATOM   1829  CA  SER A 240      -9.129  19.075  32.956  1.00 25.70           C
ATOM   1830  C   SER A 240      -9.406  18.372  31.642  1.00 22.46           C
ATOM   1831  O   SER A 240      -8.481  18.072  30.889  1.00 24.11           O
ATOM   1832  CB  SER A 240      -7.579  19.154  33.074  1.00 19.12           C
ATOM   1833  OG  SER A 240      -7.242  19.930  34.207  1.00 22.92           O
ATOM   1834  N   PRO A 241     -10.652  18.085  31.336  1.00 21.89           N
ATOM   1835  CA  PRO A 241     -11.085  17.366  30.160  1.00 20.08           C
ATOM   1836  C   PRO A 241     -11.108  18.113  28.853  1.00 23.99           C
ATOM   1837  O   PRO A 241     -11.345  17.491  27.815  1.00 23.82           O
ATOM   1838  CB  PRO A 241     -12.477  16.775  30.512  1.00 26.26           C
ATOM   1839  CG  PRO A 241     -12.979  17.963  31.310  1.00 21.14           C
ATOM   1840  CD  PRO A 241     -11.825  18.433  32.163  1.00 21.90           C
ATOM   1841  N   ASP A 242     -10.811  19.404  28.878  1.00 22.81           N
ATOM   1842  CA  ASP A 242     -10.580  20.180  27.666  1.00 17.96           C
ATOM   1843  C   ASP A 242      -9.522  21.207  28.055  1.00 19.55           C
ATOM   1844  O   ASP A 242      -9.178  21.283  29.260  1.00 16.73           O
ATOM   1845  CB  ASP A 242     -11.824  20.722  27.010  1.00 25.88           C
ATOM   1846  CG  ASP A 242     -12.649  21.633  27.872  1.00 24.73           C
ATOM   1847  OD1 ASP A 242     -12.110  22.106  28.890  1.00 20.38           O
ATOM   1848  OD2 ASP A 242     -13.832  21.863  27.532  1.00 26.06           O
ATOM   1849  N   GLU A 243      -8.916  21.840  27.055  1.00 20.71           N
ATOM   1850  CA  GLU A 243      -7.813  22.756  27.320  1.00 19.80           C
ATOM   1851  C   GLU A 243      -8.245  24.021  28.020  1.00 19.53           C
ATOM   1852  O   GLU A 243      -7.470  24.598  28.787  1.00 17.45           O
ATOM   1853  CB  GLU A 243      -7.031  22.968  26.025  1.00 15.20           C
ATOM   1854  CG  GLU A 243      -6.412  21.632  25.576  1.00 17.65           C
ATOM   1855  CD  GLU A 243      -5.270  21.219  26.502  1.00 14.78           C
ATOM   1856  OE1 GLU A 243      -4.317  22.022  26.567  1.00 20.61           O
ATOM   1857  OE2 GLU A 243      -5.348  20.190  27.177  1.00 18.25           O
ATOM   1858  N   SER A 244      -9.484  24.464  27.770  1.00 20.35           N
ATOM   1859  CA  SER A 244      -9.996  25.633  28.480  1.00 19.44           C
ATOM   1860  C   SER A 244     -10.046  25.291  29.966  1.00 16.46           C
ATOM   1861  O   SER A 244      -9.606  26.134  30.752  1.00 22.95           O
ATOM   1862  CB  SER A 244     -11.385  26.024  27.985  1.00 20.18           C
ATOM   1863  OG  SER A 244     -11.832  27.143  28.763  1.00 25.46           O
ATOM   1864  N   ARG A 245     -10.522  24.105  30.367  1.00 20.70           N
ATOM   1865  CA  ARG A 245     -10.553  23.804  31.798  1.00 22.33           C
ATOM   1866  C   ARG A 245      -9.157  23.507  32.329  1.00 21.53           C
ATOM   1867  O   ARG A 245      -8.808  23.825  33.464  1.00 21.46           O
ATOM   1868  CB  ARG A 245     -11.549  22.720  32.174  1.00 23.77           C
ATOM   1869  CG  ARG A 245     -12.974  23.320  32.084  1.00 19.77           C
ATOM   1870  CD  ARG A 245     -13.958  22.164  32.185  1.00 27.37           C
ATOM   1871  NE  ARG A 245     -14.218  21.591  30.852  1.00 25.15           N
ATOM   1872  CZ  ARG A 245     -15.082  20.586  30.707  1.00 28.20           C
ATOM   1873  NH1 ARG A 245     -15.666  20.094  31.806  1.00 31.28           N
ATOM   1874  NH2 ARG A 245     -15.348  20.084  29.516  1.00 21.61           N
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ATOM   1875  N   TYR A 246      -8.275  22.976  31.464  1.00 23.79           N
ATOM   1876  CA  TYR A 246      -6.892  22.755  31.942  1.00 19.09           C
ATOM   1877  C   TYR A 246      -6.250  24.092  32.303  1.00 21.17           C
ATOM   1878  O   TYR A 246      -5.656  24.186  33.382  1.00 22.27           O
ATOM   1879  CB  TYR A 246      -6.082  22.025  30.869  1.00 16.61           C
ATOM   1880  CG  TYR A 246      -4.621  21.807  31.233  1.00 19.40           C
ATOM   1881  CD1 TYR A 246      -4.232  21.257  32.435  1.00 19.75           C
ATOM   1882  CD2 TYR A 246      -3.624  22.129  30.323  1.00 22.69           C
ATOM   1883  CE1 TYR A 246      -2.898  21.061  32.772  1.00 21.82           C
ATOM   1884  CE2 TYR A 246      -2.289  21.944  30.627  1.00 25.37           C
ATOM   1885  CZ  TYR A 246      -1.934  21.391  31.846  1.00 21.41           C
ATOM   1886  OH  TYR A 246      -0.611  21.235  32.182  1.00 17.17           O
ATOM   1887  N   ALA A 247      -6.413  25.097  31.433  1.00 18.27           N
ATOM   1888  CA  ALA A 247      -5.867  26.435  31.638  1.00 21.58           C
ATOM   1889  C   ALA A 247      -6.361  27.056  32.938  1.00 19.91           C
ATOM   1890  O   ALA A 247      -5.583  27.602  33.725  1.00 21.76           O
ATOM   1891  CB  ALA A 247      -6.144  27.352  30.452  1.00 17.25           C
ATOM   1892  N   THR A 248      -7.674  26.975  33.196  1.00 22.30           N
ATOM   1893  CA  THR A 248      -8.206  27.498  34.468  1.00 24.66           C
ATOM   1894  C   THR A 248      -7.660  26.776  35.686  1.00 22.02           C
ATOM   1895  O   THR A 248      -7.340  27.412  36.700  1.00 29.44           O
ATOM   1896  CB  THR A 248      -9.756  27.436  34.447  1.00 27.51           C
ATOM   1897  OG1 THR A 248     -10.192  28.341  33.436  1.00 27.39           O
ATOM   1898  CG2 THR A 248     -10.344  27.815  35.808  1.00 29.59           C
ATOM   1899  N   ASN A 249      -7.441  25.465  35.641  1.00 19.27           N
ATOM   1900  CA  ASN A 249      -6.982  24.661  36.752  1.00 17.79           C
ATOM   1901  C   ASN A 249      -5.527  25.000  37.068  1.00 22.81           C
ATOM   1902  O   ASN A 249      -5.180  25.165  38.229  1.00 22.30           O
ATOM   1903  CB  ASN A 249      -7.149  23.183  36.454  1.00 22.00           C
ATOM   1904  CG  ASN A 249      -8.610  22.748  36.490  1.00 25.24           C
ATOM   1905  OD1 ASN A 249      -9.465  23.408  37.106  1.00 28.91           O
ATOM   1906  ND2 ASN A 249      -8.881  21.640  35.820  1.00 23.15           N
ATOM   1907  N   ILE A 250      -4.716  25.086  35.998  1.00 20.27           N
ATOM   1908  CA  ILE A 250      -3.330  25.480  36.216  1.00 23.25           C
ATOM   1909  C   ILE A 250      -3.315  26.925  36.706  1.00 22.66           C
ATOM   1910  O   ILE A 250      -2.639  27.222  37.696  1.00 27.25           O
ATOM   1911  CB  ILE A 250      -2.420  25.320  34.977  1.00 17.89           C
ATOM   1912  CG1 ILE A 250      -2.194  23.851  34.643  1.00 21.31           C
ATOM   1913  CG2 ILE A 250      -1.090  26.048  35.232  1.00 20.72           C
ATOM   1914  CD1 ILE A 250      -1.316  23.045  35.577  1.00 25.73           C
ATOM   1915  N   ALA A 251      -4.088  27.817  36.066  1.00 20.78           N
ATOM   1916  CA  ALA A 251      -4.077  29.231  36.474  1.00 21.60           C
ATOM   1917  C   ALA A 251      -4.486  29.407  37.933  1.00 19.92           C
ATOM   1918  O   ALA A 251      -3.871  30.204  38.636  1.00 23.77           O
ATOM   1919  CB  ALA A 251      -4.989  30.018  35.540  1.00 24.91           C
ATOM   1920  N   ASN A 252      -5.412  28.586  38.413  1.00 21.91           N
ATOM   1921  CA  ASN A 252      -5.826  28.633  39.826  1.00 27.37           C
ATOM   1922  C   ASN A 252      -4.738  28.168  40.782  1.00 26.91           C
ATOM   1923  O   ASN A 252      -4.485  28.787  41.835  1.00 30.43           O
ATOM   1924  CB  ASN A 252      -7.124  27.817  39.959  1.00 29.77           C
ATOM   1925  CG  ASN A 252      -8.329  28.501  39.340  1.00 34.19           C
ATOM   1926  OD1 ASN A 252      -8.275  29.635  38.845  1.00 41.35           O
ATOM   1927  ND2 ASN A 252      -9.494  27.860  39.294  1.00 33.75           N
ATOM   1928  N   ALA A 253      -3.983  27.119  40.433  1.00 22.42           N
ATOM   1929  CA  ALA A 253      -2.875  26.607  41.200  1.00 23.09           C
ATOM   1930  C   ALA A 253      -1.754  27.646  41.233  1.00 23.39           C
ATOM   1931  O   ALA A 253      -1.161  27.852  42.291  1.00 29.01           O
ATOM   1932  CB  ALA A 253      -2.317  25.300  40.661  1.00 30.28           C
ATOM   1933  N   MET A 254      -1.457  28.282  40.105  1.00 22.12           N
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ATOM	1934	CA	MET	A	254	-0.429	29.305	40.049	1.00	23.50	C
ATOM	1935	C	MET	A	254	-0.745	30.535	40.880	1.00	26.16	C
ATOM	1936	O	MET	A	254	0.113	31.148	41.503	1.00	26.18	O
ATOM	1937	CB	MET	A	254	-0.216	29.745	38.587	1.00	23.03	C
ATOM	1938	CG	MET	A	254	0.259	28.577	37.730	1.00	18.94	C
ATOM	1939	SD	MET	A	254	1.967	28.036	38.050	1.00	21.24	S
ATOM	1940	CE	MET	A	254	1.983	26.637	36.907	1.00	25.64	C
ATOM	1941	N	ARG	A	255	-1.996	30.967	40.779	1.00	22.68	N
ATOM	1942	CA	ARG	A	255	-2.490	32.151	41.472	1.00	26.36	C
ATOM	1943	C	ARG	A	255	-2.288	32.106	42.969	1.00	21.34	C
ATOM	1944	O	ARG	A	255	-1.853	33.058	43.616	1.00	32.51	O
ATOM	1945	CB	ARG	A	255	-3.986	32.236	41.116	1.00	27.08	C
ATOM	1946	CG	ARG	A	255	-4.696	33.315	41.916	1.00	35.35	C
ATOM	1947	CD	ARG	A	255	-6.087	33.527	41.365	1.00	29.58	C
ATOM	1948	NE	ARG	A	255	-6.065	33.882	39.948	1.00	28.85	N
ATOM	1949	CZ	ARG	A	255	-6.582	33.147	38.982	1.00	21.00	C
ATOM	1950	NH1	ARG	A	255	-7.137	31.971	39.273	1.00	32.44	N
ATOM	1951	NH2	ARG	A	255	-6.545	33.507	37.716	1.00	24.26	N
ATOM	1952	N	GLN	A	256	-2.543	30.948	43.577	1.00	27.23	N
ATOM	1953	CA	GLN	A	256	-2.399	30.658	44.976	1.00	27.13	C
ATOM	1954	C	GLN	A	256	-0.947	30.638	45.438	1.00	29.65	C
ATOM	1955	O	GLN	A	256	-0.659	30.653	46.641	1.00	31.23	O
ATOM	1956	CB	GLN	A	256	-2.983	29.281	45.317	1.00	30.48	C
ATOM	1957	CG	GLN	A	256	-4.478	29.257	45.517	1.00	30.07	C
ATOM	1958	CD	GLN	A	256	-4.987	30.523	46.192	1.00	40.42	C
ATOM	1959	OE1	GLN	A	256	-5.818	31.222	45.622	1.00	34.76	O
ATOM	1960	NE2	GLN	A	256	-4.437	30.833	47.356	1.00	41.99	N
ATOM	1961	N	ARG	A	257	-0.022	30.525	44.486	1.00	24.01	N
ATOM	1962	CA	ARG	A	257	1.399	30.535	44.797	1.00	21.55	C
ATOM	1963	C	ARG	A	257	1.976	31.875	44.337	1.00	24.24	C
ATOM	1964	O	ARG	A	257	3.175	32.158	44.345	1.00	31.12	O
ATOM	1965	CB	ARG	A	257	2.156	29.371	44.178	1.00	29.04	C
ATOM	1966	CG	ARG	A	257	1.677	27.967	44.546	1.00	27.64	C
ATOM	1967	CD	ARG	A	257	2.263	26.993	43.527	1.00	23.53	C
ATOM	1968	NE	ARG	A	257	2.195	25.596	43.873	1.00	30.09	N
ATOM	1969	CZ	ARG	A	257	3.188	24.804	44.274	1.00	22.17	C
ATOM	1970	NH1	ARG	A	257	4.418	25.245	44.470	1.00	27.53	N
ATOM	1971	NH2	ARG	A	257	2.890	23.529	44.500	1.00	28.30	N
ATOM	1972	N	GLY	A	258	1.088	32.724	43.827	1.00	24.82	N
ATOM	1973	CA	GLY	A	258	1.376	34.040	43.296	1.00	20.44	C
ATOM	1974	C	GLY	A	258	2.242	34.116	42.049	1.00	30.44	C
ATOM	1975	O	GLY	A	258	3.100	34.974	41.844	1.00	26.62	O
ATOM	1976	N	LEU	A	259	2.070	33.157	41.158	1.00	25.18	N
ATOM	1977	CA	LEU	A	259	2.848	33.060	39.909	1.00	25.26	C
ATOM	1978	C	LEU	A	259	1.925	33.380	38.754	1.00	25.85	C
ATOM	1979	O	LEU	A	259	0.705	33.474	38.968	1.00	26.59	O
ATOM	1980	CB	LEU	A	259	3.303	31.605	39.791	1.00	24.85	C
ATOM	1981	CG	LEU	A	259	4.215	31.028	40.875	1.00	30.31	C
ATOM	1982	CD1	LEU	A	259	4.334	29.521	40.738	1.00	28.83	C
ATOM	1983	CD2	LEU	A	259	5.599	31.661	40.841	1.00	30.15	C
ATOM	1984	N	PRO	A	260	2.446	33.585	37.561	1.00	27.65	N
ATOM	1985	CA	PRO	A	260	1.709	33.887	36.355	1.00	25.68	C
ATOM	1986	C	PRO	A	260	0.651	32.844	36.038	1.00	20.39	C
ATOM	1987	O	PRO	A	260	0.699	31.709	36.479	1.00	23.63	O
ATOM	1988	CB	PRO	A	260	2.689	34.067	35.185	1.00	23.29	C
ATOM	1989	CG	PRO	A	260	3.982	33.631	35.795	1.00	26.45	C
ATOM	1990	CD	PRO	A	260	3.893	33.520	37.292	1.00	24.34	C
ATOM	1991	N	THR	A	261	-0.376	33.287	35.321	1.00	19.28	N
ATOM	1992	CA	THR	A	261	-1.538	32.450	35.042	1.00	19.40	C

ATOM	1993	C	THR	A	261	-1.965	32.285	33.592	1.00	23.58	C
ATOM	1994	O	THR	A	261	-2.832	31.429	33.354	1.00	24.45	O
ATOM	1995	CB	THR	A	261	-2.753	33.182	35.712	1.00	26.00	C
ATOM	1996	OG1	THR	A	261	-2.798	34.536	35.252	1.00	25.75	O
ATOM	1997	CG2	THR	A	261	-2.633	33.186	37.226	1.00	27.44	C
ATOM	1998	N	GLN	A	262	-1.499	33.063	32.650	1.00	19.65	N
ATOM	1999	CA	GLN	A	262	-2.055	33.188	31.321	1.00	22.46	C
ATOM	2000	C	GLN	A	262	-1.636	32.146	30.292	1.00	24.66	C
ATOM	2001	O	GLN	A	262	-0.461	31.868	30.203	1.00	26.22	O
ATOM	2002	CB	GLN	A	262	-1.812	34.585	30.741	1.00	22.70	C
ATOM	2003	CG	GLN	A	262	-2.375	35.682	31.656	1.00	25.82	C
ATOM	2004	CD	GLN	A	262	-3.876	35.523	31.891	1.00	23.40	C
ATOM	2005	OE1	GLN	A	262	-4.287	35.179	32.987	1.00	23.21	O
ATOM	2006	NE2	GLN	A	262	-4.698	35.735	30.875	1.00	23.57	N
ATOM	2007	N	PHE	A	263	-2.601	31.624	29.528	1.00	21.18	N
ATOM	2008	CA	PHE	A	263	-2.275	30.568	28.570	1.00	19.80	C
ATOM	2009	C	PHE	A	263	-2.409	30.984	27.113	1.00	18.97	C
ATOM	2010	O	PHE	A	263	-3.201	31.833	26.749	1.00	17.16	O
ATOM	2011	CB	PHE	A	263	-3.277	29.394	28.705	1.00	15.84	C
ATOM	2012	CG	PHE	A	263	-2.886	28.393	29.744	1.00	15.38	C
ATOM	2013	CD1	PHE	A	263	-2.905	28.746	31.087	1.00	18.32	C
ATOM	2014	CD2	PHE	A	263	-2.380	27.139	29.437	1.00	16.13	C
ATOM	2015	CE1	PHE	A	263	-2.509	27.879	32.064	1.00	12.79	C
ATOM	2016	CE2	PHE	A	263	-2.012	26.250	30.410	1.00	20.12	C
ATOM	2017	CZ	PHE	A	263	-2.051	26.597	31.761	1.00	16.90	C
ATOM	2018	N	ILE	A	264	-1.691	30.285	26.236	1.00	14.08	N
ATOM	2019	CA	ILE	A	264	-1.919	30.314	24.797	1.00	14.26	C
ATOM	2020	C	ILE	A	264	-2.127	28.826	24.458	1.00	19.29	C
ATOM	2021	O	ILE	A	264	-1.458	28.031	25.082	1.00	17.00	O
ATOM	2022	CB	ILE	A	264	-0.969	30.953	23.805	1.00	13.88	C
ATOM	2023	CG1	ILE	A	264	0.462	30.428	24.019	1.00	12.80	C
ATOM	2024	CG2	ILE	A	264	-1.024	32.472	24.010	1.00	15.27	C
ATOM	2025	CD1	ILE	A	264	1.529	31.126	23.211	1.00	17.13	C
ATOM	2026	N	ILE	A	265	-3.163	28.483	23.687	1.00	15.04	N
ATOM	2027	CA	ILE	A	265	-3.506	27.060	23.525	1.00	15.32	C
ATOM	2028	C	ILE	A	265	-3.537	26.706	22.048	1.00	13.65	C
ATOM	2029	O	ILE	A	265	-4.166	27.350	21.230	1.00	16.17	O
ATOM	2030	CB	ILE	A	265	-4.918	26.746	24.070	1.00	15.48	C
ATOM	2031	CG1	ILE	A	265	-4.898	26.920	25.592	1.00	18.66	C
ATOM	2032	CG2	ILE	A	265	-5.334	25.302	23.764	1.00	14.76	C
ATOM	2033	CD1	ILE	A	265	-6.107	26.488	26.355	1.00	24.38	C
ATOM	2034	N	ASP	A	266	-2.776	25.669	21.674	1.00	12.09	N
ATOM	2035	CA	ASP	A	266	-2.667	25.279	20.269	1.00	10.33	C
ATOM	2036	C	ASP	A	266	-3.993	24.615	19.867	1.00	15.37	C
ATOM	2037	O	ASP	A	266	-4.476	23.766	20.627	1.00	13.38	O
ATOM	2038	CB	ASP	A	266	-1.580	24.192	20.143	1.00	13.35	C
ATOM	2039	CG	ASP	A	266	-1.068	23.980	18.726	1.00	11.89	C
ATOM	2040	OD1	ASP	A	266	-1.529	24.571	17.727	1.00	12.25	O
ATOM	2041	OD2	ASP	A	266	-0.121	23.140	18.575	1.00	14.61	O
ATOM	2042	N	GLN	A	267	-4.526	25.013	18.716	1.00	13.05	N
ATOM	2043	CA	GLN	A	267	-5.660	24.305	18.129	1.00	10.30	C
ATOM	2044	C	GLN	A	267	-5.314	24.023	16.675	1.00	15.72	C
ATOM	2045	O	GLN	A	267	-6.183	23.837	15.842	1.00	15.22	O
ATOM	2046	CB	GLN	A	267	-7.003	25.069	18.183	1.00	16.05	C
ATOM	2047	CG	GLN	A	267	-7.580	25.206	19.587	1.00	13.66	C
ATOM	2048	CD	GLN	A	267	-8.125	23.881	20.110	1.00	14.01	C
ATOM	2049	OE1	GLN	A	267	-9.284	23.536	19.860	1.00	15.83	O
ATOM	2050	NE2	GLN	A	267	-7.288	23.160	20.808	1.00	14.73	N
ATOM	2051	N	SER	A	268	-3.998	23.871	16.360	1.00	15.92	N

ATOM	2052	CA	SER	A	268	-3.594	23.553	14.991	1.00	13.57	C
ATOM	2053	C	SER	A	268	-4.227	22.267	14.502	1.00	13.43	C
ATOM	2054	O	SER	A	268	-4.570	22.147	13.318	1.00	12.19	O
ATOM	2055	CB	SER	A	268	-2.061	23.394	14.919	1.00	12.06	C
ATOM	2056	OG	SER	A	268	-1.657	22.381	15.866	1.00	15.19	O
ATOM	2057	N	ARG	A	269	-4.408	21.285	15.362	1.00	16.05	N
ATOM	2058	CA	ARG	A	269	-5.049	20.016	14.997	1.00	10.93	C
ATOM	2059	C	ARG	A	269	-5.955	19.613	16.157	1.00	14.16	C
ATOM	2060	O	ARG	A	269	-5.548	19.739	17.306	1.00	13.60	O
ATOM	2061	CB	ARG	A	269	-4.000	18.897	14.846	1.00	13.90	C
ATOM	2062	CG	ARG	A	269	-2.988	19.181	13.742	1.00	13.59	C
ATOM	2063	CD	ARG	A	269	-1.989	18.057	13.516	1.00	16.30	C
ATOM	2064	NE	ARG	A	269	-1.138	17.891	14.719	1.00	14.26	N
ATOM	2065	CZ	ARG	A	269	-0.194	16.958	14.761	1.00	12.94	C
ATOM	2066	NH1	ARG	A	269	0.001	16.127	13.759	1.00	13.40	N
ATOM	2067	NH2	ARG	A	269	0.565	16.830	15.870	1.00	16.04	N
ATOM	2068	N	VAL	A	270	-7.193	19.217	15.883	1.00	14.90	N
ATOM	2069	CA	VAL	A	270	-8.126	18.765	16.899	1.00	13.01	C
ATOM	2070	C	VAL	A	270	-8.668	17.386	16.490	1.00	15.91	C
ATOM	2071	O	VAL	A	270	-9.160	17.241	15.379	1.00	15.04	O
ATOM	2072	CB	VAL	A	270	-9.293	19.767	17.054	1.00	17.38	C
ATOM	2073	CG1	VAL	A	270	-10.238	19.254	18.148	1.00	21.04	C
ATOM	2074	CG2	VAL	A	270	-8.827	21.151	17.476	1.00	15.46	C
ATOM	2075	N	ALA	A	271	-8.546	16.440	17.412	1.00	14.81	N
ATOM	2076	CA	ALA	A	271	-9.073	15.103	17.158	1.00	15.02	C
ATOM	2077	C	ALA	A	271	-10.594	15.173	17.103	1.00	16.45	C
ATOM	2078	O	ALA	A	271	-11.260	15.904	17.849	1.00	21.19	O
ATOM	2079	CB	ALA	A	271	-8.642	14.204	18.318	1.00	16.61	C
ATOM	2080	N	LEU	A	272	-11.140	14.389	16.187	1.00	16.83	N
ATOM	2081	CA	LEU	A	272	-12.567	14.231	16.006	1.00	23.67	C
ATOM	2082	C	LEU	A	272	-12.964	12.969	16.771	1.00	24.17	C
ATOM	2083	O	LEU	A	272	-12.119	12.262	17.350	1.00	23.04	O
ATOM	2084	CB	LEU	A	272	-12.963	14.088	14.531	1.00	23.17	C
ATOM	2085	CG	LEU	A	272	-12.250	15.054	13.566	1.00	29.20	C
ATOM	2086	CD1	LEU	A	272	-12.578	14.774	12.103	1.00	29.62	C
ATOM	2087	CD2	LEU	A	272	-12.608	16.500	13.880	1.00	30.09	C
ATOM	2088	N	SER	A	273	-14.280	12.749	16.779	1.00	31.07	N
ATOM	2089	CA	SER	A	273	-14.843	11.633	17.524	1.00	27.11	C
ATOM	2090	C	SER	A	273	-14.149	10.312	17.247	1.00	23.70	C
ATOM	2091	O	SER	A	273	-14.052	9.898	16.063	1.00	27.36	O
ATOM	2092	CB	SER	A	273	-16.309	11.408	17.153	1.00	35.15	C
ATOM	2093	OG	SER	A	273	-16.962	12.527	16.600	1.00	32.10	O
ATOM	2094	N	GLY	A	274	-13.713	9.646	18.301	1.00	27.43	N
ATOM	2095	CA	GLY	A	274	-13.117	8.330	18.179	1.00	28.98	C
ATOM	2096	C	GLY	A	274	-11.731	8.210	17.631	1.00	27.96	C
ATOM	2097	O	GLY	A	274	-11.218	7.109	17.341	1.00	28.77	O
ATOM	2098	N	ALA	A	275	-11.040	9.343	17.518	1.00	20.25	N
ATOM	2099	CA	ALA	A	275	-9.692	9.284	16.938	1.00	21.95	C
ATOM	2100	C	ALA	A	275	-8.718	8.598	17.867	1.00	24.84	C
ATOM	2101	O	ALA	A	275	-7.725	8.035	17.391	1.00	25.22	O
ATOM	2102	CB	ALA	A	275	-9.210	10.672	16.549	1.00	20.57	C
ATOM	2103	N	ARG	A	276	-8.910	8.700	19.177	1.00	24.15	N
ATOM	2104	CA	ARG	A	276	-7.957	8.063	20.084	1.00	23.88	C
ATOM	2105	C	ARG	A	276	-8.693	7.172	21.078	1.00	22.10	C
ATOM	2106	O	ARG	A	276	-9.749	7.584	21.514	1.00	24.86	O
ATOM	2107	CB	ARG	A	276	-7.294	9.184	20.902	1.00	20.86	C
ATOM	2108	CG	ARG	A	276	-6.299	9.993	20.078	1.00	21.98	C
ATOM	2109	CD	ARG	A	276	-5.456	10.831	21.016	1.00	23.38	C
ATOM	2110	NE	ARG	A	276	-6.148	12.055	21.395	1.00	20.58	N

ATOM	2111	CZ	ARG	A	276	-5.491	13.084	21.949	1.00 27.48	C
ATOM	2112	NH1	ARG	A	276	-4.191	12.993	22.186	1.00 20.08	N
ATOM	2113	NH2	ARG	A	276	-6.192	14.161	22.275	1.00 22.71	N
ATOM	2114	N	SER	A	277	-8.138	6.018	21.450	1.00 24.83	N
ATOM	2115	CA	SER	A	277	-8.749	5.195	22.483	1.00 22.06	C
ATOM	2116	C	SER	A	277	-8.060	5.412	23.812	1.00 28.83	C
ATOM	2117	O	SER	A	277	-8.535	5.063	24.899	1.00 29.56	O
ATOM	2118	CB	SER	A	277	-8.679	3.712	22.061	1.00 30.69	C
ATOM	2119	OG	SER	A	277	-7.356	3.402	21.654	1.00 35.22	O
ATOM	2120	N	GLU	A	278	-6.873	6.031	23.760	1.00 21.99	N
ATOM	2121	CA	GLU	A	278	-6.072	6.339	24.932	1.00 26.09	C
ATOM	2122	C	GLU	A	278	-5.646	7.803	24.818	1.00 21.55	C
ATOM	2123	O	GLU	A	278	-5.249	8.222	23.723	1.00 24.01	O
ATOM	2124	CB	GLU	A	278	-4.850	5.438	25.021	1.00 23.82	C
ATOM	2125	CG	GLU	A	278	-5.051	3.956	24.784	1.00 40.17	C
ATOM	2126	CD	GLU	A	278	-4.851	3.092	26.010	1.00 52.25	C
ATOM	2127	OE1	GLU	A	278	-3.918	3.383	26.788	1.00 56.27	O
ATOM	2128	OE2	GLU	A	278	-5.618	2.118	26.202	1.00 64.20	O
ATOM	2129	N	TRP	A	279	-5.678	8.557	25.916	1.00 21.94	N
ATOM	2130	CA	TRP	A	279	-5.350	9.979	25.821	1.00 16.41	C
ATOM	2131	C	TRP	A	279	-3.899	10.240	25.453	1.00 20.94	C
ATOM	2132	O	TRP	A	279	-3.578	11.239	24.820	1.00 21.93	O
ATOM	2133	CB	TRP	A	279	-5.636	10.659	27.154	1.00 20.36	C
ATOM	2134	CG	TRP	A	279	-5.958	12.125	27.086	1.00 20.26	C
ATOM	2135	CD1	TRP	A	279	-5.807	13.006	26.054	1.00 23.25	C
ATOM	2136	CD2	TRP	A	279	-6.556	12.851	28.164	1.00 23.44	C
ATOM	2137	NE1	TRP	A	279	-6.270	14.240	26.432	1.00 22.30	N
ATOM	2138	CE2	TRP	A	279	-6.735	14.173	27.717	1.00 14.66	C
ATOM	2139	CE3	TRP	A	279	-6.953	12.507	29.466	1.00 21.31	C
ATOM	2140	CZ2	TRP	A	279	-7.270	15.151	28.559	1.00 22.16	C
ATOM	2141	CZ3	TRP	A	279	-7.484	13.466	30.298	1.00 20.85	C
ATOM	2142	CH2	TRP	A	279	-7.641	14.780	29.828	1.00 22.45	C
ATOM	2143	N	GLY	A	280	-3.012	9.305	25.757	1.00 20.36	N
ATOM	2144	CA	GLY	A	280	-1.585	9.496	25.487	1.00 22.05	C
ATOM	2145	C	GLY	A	280	-1.204	9.252	24.041	1.00 24.17	C
ATOM	2146	O	GLY	A	280	-0.033	9.486	23.712	1.00 20.78	O
ATOM	2147	N	GLN	A	281	-2.101	8.821	23.175	1.00 22.02	N
ATOM	2148	CA	GLN	A	281	-1.792	8.665	21.746	1.00 17.94	C
ATOM	2149	C	GLN	A	281	-1.425	10.024	21.156	1.00 16.82	C
ATOM	2150	O	GLN	A	281	-2.077	11.031	21.445	1.00 23.09	O
ATOM	2151	CB	GLN	A	281	-2.938	8.032	20.965	1.00 22.30	C
ATOM	2152	CG	GLN	A	281	-3.128	6.535	21.211	1.00 29.03	C
ATOM	2153	CD	GLN	A	281	-4.426	6.108	20.538	1.00 38.84	C
ATOM	2154	OE1	GLN	A	281	-5.495	6.224	21.137	1.00 36.72	O
ATOM	2155	NE2	GLN	A	281	-4.350	5.656	19.294	1.00 41.84	N
ATOM	2156	N	TRP	A	282	-0.324	10.090	20.396	1.00 19.27	N
ATOM	2157	CA	TRP	A	282	0.161	11.374	19.890	1.00 19.52	C
ATOM	2158	C	TRP	A	282	0.607	11.442	18.441	1.00 19.99	C
ATOM	2159	O	TRP	A	282	0.853	12.568	17.964	1.00 18.26	O
ATOM	2160	CB	TRP	A	282	1.421	11.768	20.726	1.00 24.77	C
ATOM	2161	CG	TRP	A	282	2.451	10.677	20.637	1.00 23.68	C
ATOM	2162	CD1	TRP	A	282	2.525	9.543	21.411	1.00 22.06	C
ATOM	2163	CD2	TRP	A	282	3.533	10.578	19.695	1.00 25.36	C
ATOM	2164	NE1	TRP	A	282	3.562	8.748	20.988	1.00 30.20	N
ATOM	2165	CE2	TRP	A	282	4.205	9.373	19.944	1.00 29.10	C
ATOM	2166	CE3	TRP	A	282	4.012	11.422	18.690	1.00 24.71	C
ATOM	2167	CZ2	TRP	A	282	5.322	8.960	19.211	1.00 25.73	C
ATOM	2168	CZ3	TRP	A	282	5.102	11.005	17.950	1.00 23.84	C
ATOM	2169	CH2	TRP	A	282	5.760	9.789	18.208	1.00 27.45	C

ATOM	2170	N	CYS	A	283	0.887	10.320	17.808	1.00	16.77	N
ATOM	2171	CA	CYS	A	283	1.492	10.339	16.481	1.00	16.10	C
ATOM	2172	C	CYS	A	283	0.472	10.336	15.367	1.00	17.58	C
ATOM	2173	O	CYS	A	283	-0.289	9.381	15.234	1.00	20.39	O
ATOM	2174	CB	CYS	A	283	2.444	9.127	16.295	1.00	18.32	C
ATOM	2175	SG	CYS	A	283	3.323	9.248	14.714	1.00	15.79	S
ATOM	2176	N	ASN	A	284	0.435	11.401	14.596	1.00	15.88	N
ATOM	2177	CA	ASN	A	284	-0.422	11.537	13.431	1.00	13.86	C
ATOM	2178	C	ASN	A	284	-1.829	11.000	13.718	1.00	16.24	C
ATOM	2179	O	ASN	A	284	-2.345	10.168	12.992	1.00	17.28	O
ATOM	2180	CB	ASN	A	284	0.216	10.872	12.227	1.00	15.80	C
ATOM	2181	CG	ASN	A	284	1.581	11.440	11.897	1.00	15.74	C
ATOM	2182	OD1	ASN	A	284	1.841	12.650	12.011	1.00	15.56	O
ATOM	2183	ND2	ASN	A	284	2.485	10.551	11.514	1.00	17.85	N
ATOM	2184	N	VAL	A	285	-2.409	11.576	14.761	1.00	17.47	N
ATOM	2185	CA	VAL	A	285	-3.742	11.122	15.191	1.00	16.74	C
ATOM	2186	C	VAL	A	285	-4.768	11.436	14.133	1.00	17.06	C
ATOM	2187	O	VAL	A	285	-4.852	12.490	13.520	1.00	17.11	O
ATOM	2188	CB	VAL	A	285	-4.070	11.692	16.583	1.00	17.52	C
ATOM	2189	CG1	VAL	A	285	-5.533	11.578	16.982	1.00	20.33	C
ATOM	2190	CG2	VAL	A	285	-3.137	11.015	17.559	1.00	16.10	C
ATOM	2191	N	ASN	A	286	-5.632	10.437	13.899	1.00	16.18	N
ATOM	2192	CA	ASN	A	286	-6.659	10.611	12.861	1.00	17.11	C
ATOM	2193	C	ASN	A	286	-7.893	9.793	13.252	1.00	18.44	C
ATOM	2194	O	ASN	A	286	-7.786	8.743	13.869	1.00	22.45	O
ATOM	2195	CB	ASN	A	286	-6.118	10.224	11.501	1.00	17.36	C
ATOM	2196	CG	ASN	A	286	-5.680	8.764	11.483	1.00	32.33	C
ATOM	2197	OD1	ASN	A	286	-6.441	7.864	11.101	1.00	24.90	O
ATOM	2198	ND2	ASN	A	286	-4.454	8.512	11.945	1.00	23.19	N
ATOM	2199	N	PRO	A	287	-9.047	10.320	12.882	1.00	19.71	N
ATOM	2200	CA	PRO	A	287	-9.260	11.547	12.159	1.00	18.73	C
ATOM	2201	C	PRO	A	287	-9.056	12.834	12.940	1.00	16.37	C
ATOM	2202	O	PRO	A	287	-9.320	12.879	14.143	1.00	18.92	O
ATOM	2203	CB	PRO	A	287	-10.755	11.586	11.728	1.00	20.00	C
ATOM	2204	CG	PRO	A	287	-11.372	10.469	12.522	1.00	26.90	C
ATOM	2205	CD	PRO	A	287	-10.318	9.642	13.214	1.00	21.06	C
ATOM	2206	N	ALA	A	288	-8.542	13.836	12.242	1.00	16.47	N
ATOM	2207	CA	ALA	A	288	-8.372	15.153	12.888	1.00	17.03	C
ATOM	2208	C	ALA	A	288	-8.635	16.273	11.882	1.00	11.14	C
ATOM	2209	O	ALA	A	288	-8.603	16.070	10.668	1.00	14.93	O
ATOM	2210	CB	ALA	A	288	-6.960	15.289	13.457	1.00	15.95	C
ATOM	2211	N	GLY	A	289	-8.927	17.469	12.425	1.00	14.35	N
ATOM	2212	CA	GLY	A	289	-9.136	18.589	11.524	1.00	15.43	C
ATOM	2213	C	GLY	A	289	-8.314	19.791	11.997	1.00	15.53	C
ATOM	2214	O	GLY	A	289	-7.914	19.827	13.175	1.00	14.49	O
ATOM	2215	N	PHE	A	290	-8.111	20.711	11.056	1.00	13.29	N
ATOM	2216	CA	PHE	A	290	-7.558	22.007	11.474	1.00	13.91	C
ATOM	2217	C	PHE	A	290	-8.529	22.599	12.513	1.00	14.01	C
ATOM	2218	O	PHE	A	290	-9.783	22.550	12.343	1.00	18.13	O
ATOM	2219	CB	PHE	A	290	-7.478	23.029	10.376	1.00	13.41	C
ATOM	2220	CG	PHE	A	290	-6.472	22.787	9.290	1.00	14.54	C
ATOM	2221	CD1	PHE	A	290	-5.148	22.532	9.661	1.00	15.61	C
ATOM	2222	CD2	PHE	A	290	-6.759	22.900	7.947	1.00	15.38	C
ATOM	2223	CE1	PHE	A	290	-4.178	22.356	8.706	1.00	16.64	C
ATOM	2224	CE2	PHE	A	290	-5.793	22.724	6.981	1.00	16.02	C
ATOM	2225	CZ	PHE	A	290	-4.489	22.434	7.364	1.00	13.96	C
ATOM	2226	N	GLY	A	291	-7.989	23.115	13.608	1.00	16.12	N
ATOM	2227	CA	GLY	A	291	-8.858	23.685	14.639	1.00	15.83	C
ATOM	2228	C	GLY	A	291	-9.074	25.179	14.347	1.00	15.05	C

ATOM	2229	O	GLY	A	291	-8.734	25.731	13.322	1.00	16.86	O
ATOM	2230	N	GLN	A	292	-9.714	25.814	15.329	1.00	16.03	N
ATOM	2231	CA	GLN	A	292	-9.998	27.240	15.283	1.00	18.15	C
ATOM	2232	C	GLN	A	292	-8.728	28.041	15.042	1.00	16.47	C
ATOM	2233	O	GLN	A	292	-7.733	27.885	15.754	1.00	20.75	O
ATOM	2234	CB	GLN	A	292	-10.569	27.625	16.671	1.00	25.11	C
ATOM	2235	CG	GLN	A	292	-10.367	29.061	17.091	1.00	36.07	C
ATOM	2236	CD	GLN	A	292	-11.444	29.979	16.538	1.00	39.06	C
ATOM	2237	OE1	GLN	A	292	-12.607	29.754	16.883	1.00	42.29	O
ATOM	2238	NE2	GLN	A	292	-11.079	30.982	15.746	1.00	33.92	N
ATOM	2239	N	PRO	A	293	-8.759	28.904	14.063	1.00	19.51	N
ATOM	2240	CA	PRO	A	293	-7.624	29.791	13.787	1.00	16.62	C
ATOM	2241	C	PRO	A	293	-7.430	30.766	14.931	1.00	17.64	C
ATOM	2242	O	PRO	A	293	-8.296	31.000	15.764	1.00	19.12	O
ATOM	2243	CB	PRO	A	293	-7.937	30.514	12.468	1.00	21.39	C
ATOM	2244	CG	PRO	A	293	-8.969	29.551	11.868	1.00	21.89	C
ATOM	2245	CD	PRO	A	293	-9.802	29.074	13.063	1.00	20.59	C
ATOM	2246	N	PHE	A	294	-6.244	31.406	14.941	1.00	15.74	N
ATOM	2247	CA	PHE	A	294	-5.933	32.344	15.986	1.00	18.02	C
ATOM	2248	C	PHE	A	294	-7.076	33.330	16.288	1.00	19.91	C
ATOM	2249	O	PHE	A	294	-7.647	33.926	15.394	1.00	19.02	O
ATOM	2250	CB	PHE	A	294	-4.656	33.121	15.620	1.00	18.48	C
ATOM	2251	CG	PHE	A	294	-4.543	34.434	16.357	1.00	18.57	C
ATOM	2252	CD1	PHE	A	294	-4.124	34.446	17.665	1.00	17.71	C
ATOM	2253	CD2	PHE	A	294	-4.873	35.640	15.760	1.00	20.19	C
ATOM	2254	CE1	PHE	A	294	-4.048	35.634	18.374	1.00	22.25	C
ATOM	2255	CE2	PHE	A	294	-4.789	36.832	16.450	1.00	17.34	C
ATOM	2256	CZ	PHE	A	294	-4.381	36.844	17.773	1.00	17.52	C
ATOM	2257	N	THR	A	295	-7.275	33.509	17.600	1.00	18.12	N
ATOM	2258	CA	THR	A	295	-8.237	34.492	18.090	1.00	19.71	C
ATOM	2259	C	THR	A	295	-7.955	34.819	19.546	1.00	18.88	C
ATOM	2260	O	THR	A	295	-7.459	33.959	20.293	1.00	20.71	O
ATOM	2261	CB	THR	A	295	-9.702	34.025	17.895	1.00	16.83	C
ATOM	2262	OG1	THR	A	295	-10.540	35.131	18.350	1.00	22.18	O
ATOM	2263	CG2	THR	A	295	-10.020	32.817	18.737	1.00	26.18	C
ATOM	2264	N	THR	A	296	-8.328	36.047	19.971	1.00	18.59	N
ATOM	2265	CA	THR	A	296	-8.221	36.396	21.376	1.00	19.93	C
ATOM	2266	C	THR	A	296	-9.611	36.301	22.028	1.00	22.13	C
ATOM	2267	O	THR	A	296	-9.744	36.454	23.241	1.00	20.87	O
ATOM	2268	CB	THR	A	296	-7.661	37.802	21.631	1.00	26.99	C
ATOM	2269	OG1	THR	A	296	-8.369	38.746	20.796	1.00	23.44	O
ATOM	2270	CG2	THR	A	296	-6.195	37.975	21.282	1.00	23.00	C
ATOM	2271	N	ASN	A	297	-10.607	35.947	21.225	1.00	24.08	N
ATOM	2272	CA	ASN	A	297	-11.993	35.733	21.725	1.00	23.19	C
ATOM	2273	C	ASN	A	297	-12.052	34.316	22.287	1.00	21.04	C
ATOM	2274	O	ASN	A	297	-12.578	33.371	21.686	1.00	25.87	O
ATOM	2275	CB	ASN	A	297	-12.934	35.862	20.537	1.00	28.03	C
ATOM	2276	CG	ASN	A	297	-13.122	37.223	19.915	1.00	44.66	C
ATOM	2277	OD1	ASN	A	297	-12.951	38.288	20.520	1.00	51.46	O
ATOM	2278	ND2	ASN	A	297	-13.519	37.244	18.635	1.00	44.39	N
ATOM	2279	N	THR	A	298	-11.458	34.105	23.451	1.00	22.06	N
ATOM	2280	CA	THR	A	298	-11.312	32.803	24.064	1.00	21.60	C
ATOM	2281	C	THR	A	298	-12.372	32.416	25.064	1.00	21.86	C
ATOM	2282	O	THR	A	298	-12.474	31.269	25.519	1.00	28.44	O
ATOM	2283	CB	THR	A	298	-9.923	32.741	24.772	1.00	20.07	C
ATOM	2284	OG1	THR	A	298	-9.972	33.643	25.882	1.00	20.59	O
ATOM	2285	CG2	THR	A	298	-8.848	33.157	23.786	1.00	17.68	C
ATOM	2286	N	ASN	A	299	-13.136	33.422	25.519	1.00	26.27	N
ATOM	2287	CA	ASN	A	299	-14.174	33.192	26.525	1.00	27.86	C

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ATOM   2288  C   ASN A 299     -13.626  32.575  27.790  1.00 27.60           C
ATOM   2289  O   ASN A 299     -14.276  31.744  28.437  1.00 33.49           O
ATOM   2290  CB  ASN A 299     -15.260  32.299  25.906  1.00 29.99           C
ATOM   2291  CG  ASN A 299     -16.009  33.012  24.804  1.00 41.81           C
ATOM   2292  OD1 ASN A 299     -16.247  32.460  23.728  1.00 53.74           O
ATOM   2293  ND2 ASN A 299     -16.390  34.253  25.099  1.00 51.24           N
ATOM   2294  N   ASN A 300     -12.389  32.913  28.161  1.00 25.75           N
ATOM   2295  CA  ASN A 300     -11.731  32.425  29.348  1.00 27.94           C
ATOM   2296  C   ASN A 300     -10.626  33.425  29.680  1.00 24.49           C
ATOM   2297  O   ASN A 300      -9.723  33.658  28.908  1.00 23.71           O
ATOM   2298  CB  ASN A 300     -11.167  31.012  29.147  1.00 27.27           C
ATOM   2299  CG  ASN A 300     -10.493  30.462  30.369  1.00 21.67           C
ATOM   2300  OD1 ASN A 300      -9.985  31.174  31.217  1.00 23.30           O
ATOM   2301  ND2 ASN A 300     -10.463  29.121  30.514  1.00 22.06           N
ATOM   2302  N   PRO A 301     -10.743  34.051  30.831  1.00 29.89           N
ATOM   2303  CA  PRO A 301      -9.859  35.064  31.350  1.00 30.80           C
ATOM   2304  C   PRO A 301      -8.405  34.617  31.461  1.00 30.75           C
ATOM   2305  O   PRO A 301      -7.486  35.423  31.353  1.00 25.94           O
ATOM   2306  CB  PRO A 301     -10.317  35.436  32.785  1.00 25.23           C
ATOM   2307  CG  PRO A 301     -11.418  34.448  33.052  1.00 30.76           C
ATOM   2308  CD  PRO A 301     -11.839  33.763  31.782  1.00 33.01           C
ATOM   2309  N   ASN A 302      -8.222  33.326  31.719  1.00 23.27           N
ATOM   2310  CA  ASN A 302      -6.910  32.735  31.869  1.00 20.97           C
ATOM   2311  C   ASN A 302      -6.277  32.405  30.530  1.00 24.01           C
ATOM   2312  O   ASN A 302      -5.148  31.916  30.552  1.00 20.89           O
ATOM   2313  CB  ASN A 302      -7.082  31.403  32.631  1.00 25.19           C
ATOM   2314  CG  ASN A 302      -7.806  31.646  33.957  1.00 27.19           C
ATOM   2315  OD1 ASN A 302      -8.855  31.068  34.242  1.00 25.05           O
ATOM   2316  ND2 ASN A 302      -7.182  32.493  34.750  1.00 24.65           N
ATOM   2317  N   VAL A 303      -6.990  32.602  29.442  1.00 18.61           N
ATOM   2318  CA  VAL A 303      -6.442  32.199  28.134  1.00 20.42           C
ATOM   2319  C   VAL A 303      -6.288  33.441  27.263  1.00 24.90           C
ATOM   2320  O   VAL A 303      -7.251  34.018  26.765  1.00 21.13           O
ATOM   2321  CB  VAL A 303      -7.316  31.130  27.461  1.00 18.54           C
ATOM   2322  CG1 VAL A 303      -6.696  30.695  26.124  1.00 18.31           C
ATOM   2323  CG2 VAL A 303      -7.460  29.870  28.315  1.00 19.58           C
ATOM   2324  N   ASP A 304      -5.048  33.910  27.097  1.00 19.18           N
ATOM   2325  CA  ASP A 304      -4.734  35.011  26.238  1.00 15.86           C
ATOM   2326  C   ASP A 304      -5.156  34.814  24.769  1.00 17.85           C
ATOM   2327  O   ASP A 304      -5.612  35.718  24.070  1.00 20.58           O
ATOM   2328  CB  ASP A 304      -3.230  35.343  26.184  1.00 19.27           C
ATOM   2329  CG  ASP A 304      -2.708  36.094  27.388  1.00 22.98           C
ATOM   2330  OD1 ASP A 304      -3.493  36.707  28.138  1.00 22.43           O
ATOM   2331  OD2 ASP A 304      -1.472  36.094  27.606  1.00 18.86           O
ATOM   2332  N   ALA A 305      -4.924  33.623  24.221  1.00 17.98           N
ATOM   2333  CA  ALA A 305      -5.254  33.428  22.814  1.00 17.71           C
ATOM   2334  C   ALA A 305      -5.275  31.957  22.431  1.00 19.11           C
ATOM   2335  O   ALA A 305      -4.637  31.115  23.076  1.00 17.63           O
ATOM   2336  CB  ALA A 305      -4.242  34.158  21.922  1.00 18.77           C
ATOM   2337  N   ILE A 306      -6.068  31.675  21.413  1.00 18.04           N
ATOM   2338  CA  ILE A 306      -5.999  30.372  20.744  1.00 15.41           C
ATOM   2339  C   ILE A 306      -5.022  30.628  19.604  1.00 13.99           C
ATOM   2340  O   ILE A 306      -5.103  31.676  18.961  1.00 17.21           O
ATOM   2341  CB  ILE A 306      -7.353  29.841  20.204  1.00 17.17           C
ATOM   2342  CG1 ILE A 306      -8.169  29.421  21.427  1.00 18.89           C
ATOM   2343  CG2 ILE A 306      -7.116  28.702  19.206  1.00 15.71           C
ATOM   2344  CD1 ILE A 306      -9.660  29.264  21.276  1.00 24.44           C
ATOM   2345  N   VAL A 307      -3.976  29.811  19.464  1.00 14.07           N
ATOM   2346  CA  VAL A 307      -2.988  29.942  18.410  1.00 16.02           C
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ATOM   2347  C   VAL A 307      -2.806  28.614  17.675  1.00 14.25           C
ATOM   2348  O   VAL A 307      -3.426  27.581  18.026  1.00 12.07           O
ATOM   2349  CB  VAL A 307      -1.602  30.385  18.993  1.00 10.04           C
ATOM   2350  CG1 VAL A 307      -1.709  31.787  19.590  1.00 18.88           C
ATOM   2351  CG2 VAL A 307      -1.171  29.347  20.032  1.00 15.95           C
ATOM   2352  N   TRP A 308      -2.073  28.598  16.567  1.00 14.38           N
ATOM   2353  CA  TRP A 308      -1.582  27.370  15.937  1.00 13.45           C
ATOM   2354  C   TRP A 308      -0.048  27.348  16.136  1.00 12.10           C
ATOM   2355  O   TRP A 308       0.666  28.300  15.767  1.00 15.65           O
ATOM   2356  CB  TRP A 308      -1.868  27.212  14.458  1.00 13.60           C
ATOM   2357  CG  TRP A 308      -3.279  26.991  14.043  1.00 13.39           C
ATOM   2358  CD1 TRP A 308      -4.388  27.092  14.809  1.00 15.59           C
ATOM   2359  CD2 TRP A 308      -3.696  26.593  12.734  1.00 10.36           C
ATOM   2360  NE1 TRP A 308      -5.515  26.770  14.054  1.00 15.23           N
ATOM   2361  CE2 TRP A 308      -5.107  26.479  12.789  1.00 12.08           C
ATOM   2362  CE3 TRP A 308      -3.021  26.329  11.530  1.00 12.71           C
ATOM   2363  CZ2 TRP A 308      -5.823  26.135  11.633  1.00 14.21           C
ATOM   2364  CZ3 TRP A 308      -3.738  25.990  10.407  1.00 14.85           C
ATOM   2365  CH2 TRP A 308      -5.135  25.870  10.483  1.00 16.00           C
ATOM   2366  N   VAL A 309       0.413  26.249  16.757  1.00 13.08           N
ATOM   2367  CA  VAL A 309       1.864  26.155  17.006  1.00 11.26           C
ATOM   2368  C   VAL A 309       2.422  25.027  16.146  1.00 10.78           C
ATOM   2369  O   VAL A 309       3.254  25.284  15.308  1.00 13.32           O
ATOM   2370  CB  VAL A 309       2.080  25.918  18.507  1.00  8.84           C
ATOM   2371  CG1 VAL A 309       3.579  25.973  18.800  1.00 10.12           C
ATOM   2372  CG2 VAL A 309       1.338  26.928  19.376  1.00 15.13           C
ATOM   2373  N   LYS A 310       1.965  23.761  16.347  1.00 12.84           N
ATOM   2374  CA  LYS A 310       2.445  22.719  15.437  1.00 14.13           C
ATOM   2375  C   LYS A 310       1.918  22.993  14.044  1.00 13.15           C
ATOM   2376  O   LYS A 310       0.720  23.277  13.871  1.00 13.30           O
ATOM   2377  CB  LYS A 310       1.808  21.402  15.905  1.00 13.66           C
ATOM   2378  CG  LYS A 310       1.851  20.224  14.964  1.00 12.89           C
ATOM   2379  CD  LYS A 310       3.249  19.629  14.825  1.00 15.43           C
ATOM   2380  CE  LYS A 310       3.193  18.660  13.641  1.00 13.14           C
ATOM   2381  NZ  LYS A 310       4.483  17.865  13.599  1.00 18.31           N
ATOM   2382  N   PRO A 311       2.722  22.855  13.039  1.00 12.10           N
ATOM   2383  CA  PRO A 311       2.281  23.027  11.635  1.00 12.11           C
ATOM   2384  C   PRO A 311       1.569  21.776  11.145  1.00 14.07           C
ATOM   2385  O   PRO A 311       2.270  20.812  10.803  1.00 13.76           O
ATOM   2386  CB  PRO A 311       3.531  23.309  10.796  1.00 14.97           C
ATOM   2387  CG  PRO A 311       4.536  23.666  11.894  1.00 16.80           C
ATOM   2388  CD  PRO A 311       4.177  22.732  13.048  1.00 13.71           C
ATOM   2389  N   GLY A 312       0.245  21.712  11.140  1.00 12.88           N
ATOM   2390  CA  GLY A 312      -0.478  20.520  10.763  1.00 15.35           C
ATOM   2391  C   GLY A 312      -0.218  20.217   9.284  1.00 15.66           C
ATOM   2392  O   GLY A 312      -0.432  21.081   8.432  1.00 14.37           O
ATOM   2393  N   GLY A 313       0.242  18.983   9.091  1.00 12.66           N
ATOM   2394  CA  GLY A 313       0.651  18.507   7.772  1.00 12.24           C
ATOM   2395  C   GLY A 313       2.121  18.063   7.876  1.00 14.01           C
ATOM   2396  O   GLY A 313       2.548  17.178   7.132  1.00 15.98           O
ATOM   2397  N   GLU A 314       2.858  18.604   8.844  1.00 15.55           N
ATOM   2398  CA  GLU A 314       4.220  18.088   9.099  1.00 16.28           C
ATOM   2399  C   GLU A 314       4.099  16.836   9.963  1.00 17.65           C
ATOM   2400  O   GLU A 314       3.464  16.906  10.997  1.00 14.94           O
ATOM   2401  CB  GLU A 314       5.002  19.155   9.912  1.00 15.42           C
ATOM   2402  CG  GLU A 314       5.448  20.292   9.018  1.00 14.51           C
ATOM   2403  CD  GLU A 314       6.343  21.356   9.600  1.00 21.84           C
ATOM   2404  OE1 GLU A 314       6.761  21.212  10.767  1.00 22.23           O
ATOM   2405  OE2 GLU A 314       6.631  22.367   8.915  1.00 22.72           O
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ATOM	2406	N	SER	A	315	4.636	15.699	9.550	1.00	14.50	N
ATOM	2407	CA	SER	A	315	4.468	14.474	10.303	1.00	14.77	C
ATOM	2408	C	SER	A	315	5.050	14.546	11.706	1.00	15.80	C
ATOM	2409	O	SER	A	315	6.062	15.191	11.967	1.00	17.95	O
ATOM	2410	CB	SER	A	315	5.106	13.334	9.520	1.00	13.06	C
ATOM	2411	OG	SER	A	315	4.970	12.075	10.141	1.00	17.54	O
ATOM	2412	N	ASP	A	316	4.397	13.801	12.585	1.00	12.32	N
ATOM	2413	CA	ASP	A	316	4.886	13.609	13.931	1.00	16.00	C
ATOM	2414	C	ASP	A	316	5.972	12.506	13.986	1.00	14.01	C
ATOM	2415	O	ASP	A	316	6.657	12.408	14.998	1.00	15.96	O
ATOM	2416	CB	ASP	A	316	3.755	13.207	14.871	1.00	13.64	C
ATOM	2417	CG	ASP	A	316	2.728	14.328	15.016	1.00	16.05	C
ATOM	2418	OD1	ASP	A	316	3.170	15.484	15.121	1.00	17.74	O
ATOM	2419	OD2	ASP	A	316	1.536	13.946	15.002	1.00	21.87	O
ATOM	2420	N	GLY	A	317	5.965	11.649	12.958	1.00	15.50	N
ATOM	2421	CA	GLY	A	317	6.890	10.494	12.924	1.00	12.47	C
ATOM	2422	C	GLY	A	317	6.293	9.453	11.979	1.00	14.64	C
ATOM	2423	O	GLY	A	317	5.155	9.623	11.523	1.00	16.59	O
ATOM	2424	N	GLN	A	318	6.977	8.340	11.737	1.00	14.21	N
ATOM	2425	CA	GLN	A	318	6.502	7.304	10.831	1.00	14.75	C
ATOM	2426	C	GLN	A	318	5.593	6.349	11.600	1.00	22.28	C
ATOM	2427	O	GLN	A	318	5.967	5.234	11.947	1.00	22.93	O
ATOM	2428	CB	GLN	A	318	7.679	6.551	10.217	1.00	16.11	C
ATOM	2429	CG	GLN	A	318	8.723	7.423	9.590	1.00	24.55	C
ATOM	2430	CD	GLN	A	318	9.902	6.636	9.018	1.00	31.53	C
ATOM	2431	OE1	GLN	A	318	10.937	6.714	9.660	1.00	27.30	O
ATOM	2432	NE2	GLN	A	318	9.546	5.995	7.915	1.00	29.42	N
ATOM	2433	N	CYS	A	319	4.391	6.858	11.897	1.00	19.08	N
ATOM	2434	CA	CYS	A	319	3.477	6.164	12.770	1.00	16.55	C
ATOM	2435	C	CYS	A	319	2.093	6.788	12.606	1.00	22.67	C
ATOM	2436	O	CYS	A	319	1.943	7.782	11.891	1.00	16.92	O
ATOM	2437	CB	CYS	A	319	3.965	6.301	14.213	1.00	21.55	C
ATOM	2438	SG	CYS	A	319	4.718	7.796	14.848	1.00	17.95	S
ATOM	2439	N	GLY	A	320	1.130	6.124	13.233	1.00	22.31	N
ATOM	2440	CA	GLY	A	320	-0.208	6.629	13.343	1.00	22.24	C
ATOM	2441	C	GLY	A	320	-1.176	6.558	12.208	1.00	27.16	C
ATOM	2442	O	GLY	A	320	-2.371	6.257	12.400	1.00	29.10	O
ATOM	2443	N	MET	A	321	-0.736	6.903	11.019	1.00	29.52	N
ATOM	2444	CA	MET	A	321	-1.576	6.966	9.836	1.00	31.67	C
ATOM	2445	C	MET	A	321	-0.722	6.420	8.705	1.00	27.43	C
ATOM	2446	O	MET	A	321	0.483	6.663	8.652	1.00	30.77	O
ATOM	2447	CB	MET	A	321	-2.121	8.365	9.601	1.00	28.11	C
ATOM	2448	CG	MET	A	321	-3.156	8.405	8.480	1.00	31.81	C
ATOM	2449	SD	MET	A	321	-3.906	10.023	8.248	1.00	31.22	S
ATOM	2450	CE	MET	A	321	-3.513	10.340	6.526	1.00	26.93	C
ATOM	2451	N	GLY	A	322	-1.329	5.533	7.926	1.00	32.97	N
ATOM	2452	CA	GLY	A	322	-0.603	4.883	6.831	1.00	31.12	C
ATOM	2453	C	GLY	A	322	0.025	5.915	5.908	1.00	25.96	C
ATOM	2454	O	GLY	A	322	-0.624	6.902	5.547	1.00	34.14	O
ATOM	2455	N	GLY	A	323	1.288	5.724	5.539	1.00	34.72	N
ATOM	2456	CA	GLY	A	323	1.967	6.646	4.640	1.00	33.66	C
ATOM	2457	C	GLY	A	323	2.742	7.742	5.334	1.00	30.88	C
ATOM	2458	O	GLY	A	323	3.421	8.547	4.684	1.00	29.21	O
ATOM	2459	N	ALA	A	324	2.726	7.769	6.667	1.00	24.89	N
ATOM	2460	CA	ALA	A	324	3.457	8.775	7.412	1.00	21.70	C
ATOM	2461	C	ALA	A	324	4.966	8.740	7.280	1.00	25.53	C
ATOM	2462	O	ALA	A	324	5.655	7.743	7.577	1.00	22.74	O
ATOM	2463	CB	ALA	A	324	3.092	8.591	8.892	1.00	17.64	C
ATOM	2464	N	PRO	A	325	5.539	9.881	6.893	1.00	25.63	N

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ATOM   2465  CA  PRO A 325       6.970  10.103   6.811  1.00 26.66           C
ATOM   2466  C   PRO A 325       7.646  10.398   8.125  1.00 29.25           C
ATOM   2467  O   PRO A 325       6.894  10.457   9.109  1.00 21.69           O
ATOM   2468  CB  PRO A 325       7.111  11.313   5.850  1.00 22.47           C
ATOM   2469  CG  PRO A 325       5.802  12.037   6.045  1.00 21.32           C
ATOM   2470  CD  PRO A 325       4.739  11.079   6.525  1.00 17.88           C
ATOM   2471  N   ALA A 326       8.954  10.544   8.317  1.00 19.09           N
ATOM   2472  CA  ALA A 326       9.615  10.890   9.561  1.00 23.89           C
ATOM   2473  C   ALA A 326       9.216  12.216  10.173  1.00 23.29           C
ATOM   2474  O   ALA A 326       8.714  13.059   9.401  1.00 25.62           O
ATOM   2475  CB  ALA A 326      11.139  10.907   9.252  1.00 27.19           C
ATOM   2476  N   ALA A 327       9.426  12.504  11.455  1.00 19.22           N
ATOM   2477  CA  ALA A 327       9.023  13.727  12.100  1.00 26.18           C
ATOM   2478  C   ALA A 327       9.522  14.940  11.333  1.00 26.83           C
ATOM   2479  O   ALA A 327      10.684  15.067  10.954  1.00 27.01           O
ATOM   2480  CB  ALA A 327       9.482  13.838  13.551  1.00 27.41           C
ATOM   2481  N   GLY A 328       8.623  15.877  11.114  1.00 23.90           N
ATOM   2482  CA  GLY A 328       8.851  17.114  10.424  1.00 21.79           C
ATOM   2483  C   GLY A 328       8.712  17.019   8.906  1.00 18.01           C
ATOM   2484  O   GLY A 328       8.705  18.086   8.313  1.00 20.46           O
ATOM   2485  N   MET A 329       8.605  15.830   8.317  1.00 20.58           N
ATOM   2486  CA  MET A 329       8.483  15.690   6.867  1.00 19.38           C
ATOM   2487  C   MET A 329       7.020  15.942   6.473  1.00 15.08           C
ATOM   2488  O   MET A 329       6.132  15.611   7.248  1.00 15.65           O
ATOM   2489  CB  MET A 329       8.920  14.272   6.515  1.00 25.54           C
ATOM   2490  CG  MET A 329      10.030  13.990   5.558  1.00 38.71           C
ATOM   2491  SD  MET A 329      11.606  14.772   5.863  1.00 34.88           S
ATOM   2492  CE  MET A 329      12.668  13.369   6.212  1.00 26.53           C
ATOM   2493  N   TRP A 330       6.793  16.575   5.336  1.00 15.69           N
ATOM   2494  CA  TRP A 330       5.437  16.883   4.904  1.00 16.18           C
ATOM   2495  C   TRP A 330       4.669  15.610   4.585  1.00 14.06           C
ATOM   2496  O   TRP A 330       5.159  14.658   3.978  1.00 18.94           O
ATOM   2497  CB  TRP A 330       5.527  17.777   3.670  1.00 17.74           C
ATOM   2498  CG  TRP A 330       4.163  18.313   3.348  1.00 15.93           C
ATOM   2499  CD1 TRP A 330       3.367  18.005   2.307  1.00 16.88           C
ATOM   2500  CD2 TRP A 330       3.478  19.317   4.118  1.00 17.09           C
ATOM   2501  NE1 TRP A 330       2.180  18.738   2.345  1.00 15.83           N
ATOM   2502  CE2 TRP A 330       2.266  19.558   3.461  1.00 15.02           C
ATOM   2503  CE3 TRP A 330       3.756  20.024   5.288  1.00 16.31           C
ATOM   2504  CZ2 TRP A 330       1.309  20.466   3.919  1.00 14.94           C
ATOM   2505  CZ3 TRP A 330       2.836  20.949   5.753  1.00 17.53           C
ATOM   2506  CH2 TRP A 330       1.606  21.153   5.078  1.00 16.24           C
ATOM   2507  N   PHE A 331       3.433  15.559   5.065  1.00 16.09           N
ATOM   2508  CA  PHE A 331       2.550  14.406   4.961  1.00 14.41           C
ATOM   2509  C   PHE A 331       1.262  14.921   4.313  1.00 16.69           C
ATOM   2510  O   PHE A 331       0.322  15.273   5.035  1.00 15.30           O
ATOM   2511  CB  PHE A 331       2.322  13.836   6.367  1.00 16.27           C
ATOM   2512  CG  PHE A 331       1.521  12.564   6.476  1.00 17.29           C
ATOM   2513  CD1 PHE A 331       1.080  11.879   5.353  1.00 18.71           C
ATOM   2514  CD2 PHE A 331       1.246  12.028   7.726  1.00 15.36           C
ATOM   2515  CE1 PHE A 331       0.357  10.699   5.463  1.00 18.22           C
ATOM   2516  CE2 PHE A 331       0.517  10.859   7.857  1.00 16.90           C
ATOM   2517  CZ  PHE A 331       0.080  10.205   6.721  1.00 19.20           C
ATOM   2518  N   ASP A 332       1.326  15.006   2.969  1.00 17.34           N
ATOM   2519  CA  ASP A 332       0.227  15.702   2.292  1.00 19.24           C
ATOM   2520  C   ASP A 332      -1.131  15.069   2.432  1.00 16.36           C
ATOM   2521  O   ASP A 332      -2.111  15.825   2.522  1.00 16.52           O
ATOM   2522  CB  ASP A 332       0.641  15.973   0.839  1.00 15.59           C
ATOM   2523  CG  ASP A 332      -0.222  17.075   0.249  1.00 18.84           C
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ATOM   2524  OD1 ASP A 332     -0.019  18.223   0.689  1.00 18.37           O
ATOM   2525  OD2 ASP A 332     -1.055  16.776  -0.643  1.00 21.30           O
ATOM   2526  N   ALA A 333     -1.266  13.736   2.534  1.00 16.52           N
ATOM   2527  CA  ALA A 333     -2.595  13.180   2.750  1.00 16.87           C
ATOM   2528  C   ALA A 333     -3.173  13.621   4.115  1.00 13.54           C
ATOM   2529  O   ALA A 333     -4.387  13.716   4.262  1.00 16.52           O
ATOM   2530  CB  ALA A 333     -2.514  11.657   2.691  1.00 20.56           C
ATOM   2531  N   TYR A 334     -2.261  13.791   5.066  1.00 15.39           N
ATOM   2532  CA  TYR A 334     -2.709  14.255   6.379  1.00 14.46           C
ATOM   2533  C   TYR A 334     -3.178  15.708   6.293  1.00 15.06           C
ATOM   2534  O   TYR A 334     -4.201  16.014   6.922  1.00 16.95           O
ATOM   2535  CB  TYR A 334     -1.604  14.026   7.397  1.00 14.33           C
ATOM   2536  CG  TYR A 334     -2.063  14.109   8.826  1.00 16.96           C
ATOM   2537  CD1 TYR A 334     -2.223  15.362   9.413  1.00 12.69           C
ATOM   2538  CD2 TYR A 334     -2.320  13.005   9.604  1.00 17.31           C
ATOM   2539  CE1 TYR A 334     -2.633  15.496  10.733  1.00 14.54           C
ATOM   2540  CE2 TYR A 334     -2.720  13.099  10.917  1.00 16.18           C
ATOM   2541  CZ  TYR A 334     -2.873  14.362  11.474  1.00 14.97           C
ATOM   2542  OH  TYR A 334     -3.293  14.462  12.773  1.00 16.04           O
ATOM   2543  N   ALA A 335     -2.419  16.527   5.566  1.00 17.05           N
ATOM   2544  CA  ALA A 335     -2.806  17.906   5.335  1.00 18.69           C
ATOM   2545  C   ALA A 335     -4.152  17.990   4.599  1.00 18.05           C
ATOM   2546  O   ALA A 335     -5.010  18.776   5.025  1.00 16.39           O
ATOM   2547  CB  ALA A 335     -1.763  18.653   4.526  1.00 16.72           C
ATOM   2548  N   GLN A 336     -4.406  17.124   3.644  1.00 17.93           N
ATOM   2549  CA  GLN A 336     -5.726  17.086   2.988  1.00 16.33           C
ATOM   2550  C   GLN A 336     -6.789  16.721   4.000  1.00 14.31           C
ATOM   2551  O   GLN A 336     -7.854  17.362   4.089  1.00 18.81           O
ATOM   2552  CB  GLN A 336     -5.681  16.104   1.788  1.00 16.97           C
ATOM   2553  CG  GLN A 336     -4.786  16.614   0.669  1.00 21.18           C
ATOM   2554  CD  GLN A 336     -4.707  15.562  -0.429  1.00 22.27           C
ATOM   2555  OE1 GLN A 336     -5.782  15.113  -0.864  1.00 26.15           O
ATOM   2556  NE2 GLN A 336     -3.511  15.175  -0.828  1.00 19.55           N
ATOM   2557  N   MET A 337     -6.575  15.748   4.886  1.00 16.42           N
ATOM   2558  CA  MET A 337     -7.510  15.368   5.919  1.00 15.57           C
ATOM   2559  C   MET A 337     -7.844  16.517   6.861  1.00 19.15           C
ATOM   2560  O   MET A 337     -8.997  16.828   7.214  1.00 17.09           O
ATOM   2561  CB  MET A 337     -7.029  14.130   6.691  1.00 12.96           C
ATOM   2562  CG  MET A 337     -7.841  13.856   7.949  1.00 13.77           C
ATOM   2563  SD  MET A 337     -7.030  12.851   9.216  1.00 17.79           S
ATOM   2564  CE  MET A 337     -5.797  14.064   9.728  1.00 15.11           C
ATOM   2565  N   LEU A 338     -6.791  17.252   7.292  1.00 17.12           N
ATOM   2566  CA  LEU A 338     -7.037  18.360   8.215  1.00 13.22           C
ATOM   2567  C   LEU A 338     -7.920  19.420   7.512  1.00 12.62           C
ATOM   2568  O   LEU A 338     -8.692  20.078   8.208  1.00 16.09           O
ATOM   2569  CB  LEU A 338     -5.750  19.033   8.672  1.00 12.72           C
ATOM   2570  CG  LEU A 338     -4.854  18.184   9.613  1.00 12.16           C
ATOM   2571  CD1 LEU A 338     -3.504  18.883   9.684  1.00 14.66           C
ATOM   2572  CD2 LEU A 338     -5.481  17.933  10.963  1.00 14.99           C
ATOM   2573  N   THR A 339     -7.762  19.530   6.207  1.00 15.20           N
ATOM   2574  CA  THR A 339     -8.517  20.549   5.466  1.00 14.07           C
ATOM   2575  C   THR A 339     -9.973  20.127   5.340  1.00 17.40           C
ATOM   2576  O   THR A 339    -10.853  20.895   5.693  1.00 16.52           O
ATOM   2577  CB  THR A 339     -7.925  20.705   4.064  1.00 14.09           C
ATOM   2578  OG1 THR A 339     -6.543  21.106   4.095  1.00 17.23           O
ATOM   2579  CG2 THR A 339     -8.676  21.807   3.307  1.00 15.79           C
ATOM   2580  N   GLN A 340    -10.209  18.932   4.816  1.00 17.13           N
ATOM   2581  CA  GLN A 340    -11.600  18.444   4.763  1.00 18.38           C
ATOM   2582  C   GLN A 340    -12.301  18.472   6.108  1.00 21.25           C
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	ATOM	2583	O	GLN	A	340	-13.537	18.629	6.155	1.00	21.95	O
	ATOM	2584	CB	GLN	A	340	-11.617	16.996	4.243	1.00	19.29	C
	ATOM	2585	CG	GLN	A	340	-10.990	16.788	2.898	1.00	20.15	C
	ATOM	2586	CD	GLN	A	340	-10.844	15.347	2.464	1.00	39.34	C
5	ATOM	2587	OE1	GLN	A	340	-11.666	14.856	1.695	1.00	48.75	O
	ATOM	2588	NE2	GLN	A	340	-9.811	14.662	2.941	1.00	41.51	N
	ATOM	2589	N	ASN	A	341	-11.648	18.269	7.254	1.00	16.74	N
	ATOM	2590	CA	ASN	A	341	-12.266	18.284	8.571	1.00	17.02	C
	ATOM	2591	C	ASN	A	341	-12.058	19.597	9.323	1.00	14.87	C
10	ATOM	2592	O	ASN	A	341	-12.344	19.646	10.530	1.00	16.75	O
	ATOM	2593	CB	ASN	A	341	-11.733	17.147	9.439	1.00	20.22	C
	ATOM	2594	CG	ASN	A	341	-12.196	15.814	8.876	1.00	29.67	C
	ATOM	2595	OD1	ASN	A	341	-13.358	15.425	9.026	1.00	27.00	O
	ATOM	2596	ND2	ASN	A	341	-11.285	15.111	8.228	1.00	27.87	N
15	ATOM	2597	N	ALA	A	342	-11.655	20.620	8.570	1.00	15.69	N
	ATOM	2598	CA	ALA	A	342	-11.376	21.899	9.250	1.00	16.57	C
	ATOM	2599	C	ALA	A	342	-12.564	22.549	9.947	1.00	15.33	C
	ATOM	2600	O	ALA	A	342	-13.726	22.421	9.579	1.00	17.77	O
	ATOM	2601	CB	ALA	A	342	-10.770	22.898	8.286	1.00	16.11	C
20	ATOM	2602	N	HIS	A	343	-12.166	23.352	10.924	1.00	15.51	N
	ATOM	2603	CA	HIS	A	343	-13.073	24.222	11.681	1.00	17.62	C
	ATOM	2604	C	HIS	A	343	-13.823	25.077	10.667	1.00	15.64	C
	ATOM	2605	O	HIS	A	343	-13.259	25.492	9.663	1.00	17.37	O
	ATOM	2606	CB	HIS	A	343	-12.241	25.177	12.540	1.00	20.31	C
25	ATOM	2607	CG	HIS	A	343	-13.053	25.933	13.534	1.00	19.46	C
	ATOM	2608	ND1	HIS	A	343	-13.707	27.108	13.227	1.00	19.05	N
	ATOM	2609	CD2	HIS	A	343	-13.310	25.671	14.840	1.00	20.32	C
	ATOM	2610	CE1	HIS	A	343	-14.338	27.522	14.319	1.00	19.65	C
	ATOM	2611	NE2	HIS	A	343	-14.098	26.687	15.323	1.00	18.29	N
30	ATOM	2612	N	ASP	A	344	-15.103	25.337	11.008	1.00	18.61	N
	ATOM	2613	CA	ASP	A	344	-15.950	26.127	10.114	1.00	20.83	C
	ATOM	2614	C	ASP	A	344	-15.454	27.497	9.712	1.00	18.50	C
	ATOM	2615	O	ASP	A	344	-15.776	28.009	8.617	1.00	19.65	O
	ATOM	2616	CB	ASP	A	344	-17.319	26.381	10.775	1.00	25.00	C
35	ATOM	2617	CG	ASP	A	344	-18.236	25.186	10.782	1.00	34.89	C
	ATOM	2618	OD1	ASP	A	344	-17.973	24.200	10.064	1.00	34.92	O
	ATOM	2619	OD2	ASP	A	344	-19.239	25.245	11.525	1.00	39.34	O
	ATOM	2620	N	GLU	A	345	-14.615	28.169	10.499	1.00	19.67	N
	ATOM	2621	CA	GLU	A	345	-14.047	29.439	10.063	1.00	22.09	C
40	ATOM	2622	C	GLU	A	345	-13.243	29.344	8.768	1.00	16.48	C
	ATOM	2623	O	GLU	A	345	-13.207	30.294	7.988	1.00	20.11	O
	ATOM	2624	CB	GLU	A	345	-13.182	30.059	11.183	1.00	21.92	C
	ATOM	2625	CG	GLU	A	345	-14.086	30.236	12.402	1.00	35.84	C
	ATOM	2626	CD	GLU	A	345	-13.699	31.384	13.305	1.00	41.79	C
45	ATOM	2627	OE1	GLU	A	345	-12.517	31.778	13.290	1.00	36.10	O
	ATOM	2628	OE2	GLU	A	345	-14.612	31.865	14.006	1.00	48.99	O
	ATOM	2629	N	ILE	A	346	-12.591	28.208	8.483	1.00	15.60	N
	ATOM	2630	CA	ILE	A	346	-11.750	28.048	7.307	1.00	15.20	C
	ATOM	2631	C	ILE	A	346	-12.598	27.728	6.083	1.00	16.62	C
50	ATOM	2632	O	ILE	A	346	-13.272	26.691	6.039	1.00	17.87	O
	ATOM	2633	CB	ILE	A	346	-10.755	26.878	7.551	1.00	17.64	C
	ATOM	2634	CG1	ILE	A	346	-9.853	27.349	8.700	1.00	18.77	C
	ATOM	2635	CG2	ILE	A	346	-9.930	26.542	6.323	1.00	16.36	C
	ATOM	2636	CD1	ILE	A	346	-9.204	26.204	9.476	1.00	17.77	C
55	ATOM	2637	N	ALA	A	347	-12.535	28.650	5.137	1.00	18.51	N
	ATOM	2638	CA	ALA	A	347	-13.315	28.522	3.902	1.00	19.06	C
	ATOM	2639	C	ALA	A	347	-12.714	29.367	2.772	1.00	22.31	C
	ATOM	2640	O	ALA	A	347	-12.227	30.448	3.199	1.00	20.04	O
	ATOM	2641	CB	ALA	A	347	-14.730	29.018	4.179	1.00	23.68	C

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ATOM   2642  N   GLY B   3     103.122  49.891  57.804  1.00 33.72           N
ATOM   2643  CA  GLY B   3     102.929  51.013  56.900  1.00 37.30           C
ATOM   2644  C   GLY B   3     101.701  50.803  56.016  1.00 27.78           C
ATOM   2645  O   GLY B   3     101.105  49.740  55.924  1.00 26.94           O
ATOM   2646  N   ASN B   4     101.361  51.854  55.290  1.00 25.02           N
ATOM   2647  CA  ASN B   4     100.206  51.840  54.362  1.00 24.16           C
ATOM   2648  C   ASN B   4     100.539  51.062  53.114  1.00 24.20           C
ATOM   2649  O   ASN B   4     101.457  51.312  52.321  1.00 23.81           O
ATOM   2650  CB  ASN B   4      99.927  53.330  54.110  1.00 21.34           C
ATOM   2651  CG  ASN B   4      98.845  53.603  53.108  1.00 18.32           C
ATOM   2652  OD1 ASN B   4      98.145  52.680  52.633  1.00 21.01           O
ATOM   2653  ND2 ASN B   4      98.670  54.870  52.732  1.00 23.62           N
ATOM   2654  N   PRO B   5      99.752  50.008  52.818  1.00 23.45           N
ATOM   2655  CA  PRO B   5      99.932  49.151  51.683  1.00 24.15           C
ATOM   2656  C   PRO B   5      99.726  49.772  50.330  1.00 19.72           C
ATOM   2657  O   PRO B   5     100.062  49.190  49.307  1.00 22.93           O
ATOM   2658  CB  PRO B   5      98.966  47.952  51.875  1.00 23.21           C
ATOM   2659  CG  PRO B   5      97.901  48.595  52.725  1.00 27.26           C
ATOM   2660  CD  PRO B   5      98.585  49.633  53.628  1.00 23.90           C
ATOM   2661  N   PHE B   6      99.082  50.954  50.275  1.00 22.55           N
ATOM   2662  CA  PHE B   6      98.818  51.618  49.018  1.00 22.78           C
ATOM   2663  C   PHE B   6      99.917  52.630  48.660  1.00 21.92           C
ATOM   2664  O   PHE B   6     100.009  53.070  47.530  1.00 22.74           O
ATOM   2665  CB  PHE B   6      97.491  52.382  49.197  1.00 22.52           C
ATOM   2666  CG  PHE B   6      96.277  51.475  49.205  1.00 18.54           C
ATOM   2667  CD1 PHE B   6      95.697  51.154  47.985  1.00 18.88           C
ATOM   2668  CD2 PHE B   6      95.782  50.982  50.380  1.00 18.39           C
ATOM   2669  CE1 PHE B   6      94.573  50.328  47.949  1.00 19.90           C
ATOM   2670  CE2 PHE B   6      94.657  50.143  50.361  1.00 18.61           C
ATOM   2671  CZ  PHE B   6      94.093  49.845  49.141  1.00 16.10           C
ATOM   2672  N   SER B   7     100.716  52.943  49.665  1.00 24.78           N
ATOM   2673  CA  SER B   7     101.800  53.926  49.472  1.00 27.38           C
ATOM   2674  C   SER B   7     102.702  53.477  48.327  1.00 25.04           C
ATOM   2675  O   SER B   7     103.250  52.365  48.263  1.00 29.27           O
ATOM   2676  CB  SER B   7     102.550  54.137  50.776  1.00 30.87           C
ATOM   2677  OG  SER B   7     103.739  54.880  50.521  1.00 37.92           O
ATOM   2678  N   GLY B   8     102.794  54.334  47.312  1.00 28.72           N
ATOM   2679  CA  GLY B   8     103.560  54.109  46.121  1.00 26.32           C
ATOM   2680  C   GLY B   8     103.077  53.121  45.096  1.00 28.15           C
ATOM   2681  O   GLY B   8     103.742  52.785  44.120  1.00 26.94           O
ATOM   2682  N   ARG B   9     101.841  52.650  45.259  1.00 26.95           N
ATOM   2683  CA  ARG B   9     101.181  51.735  44.362  1.00 28.04           C
ATOM   2684  C   ARG B   9      99.972  52.375  43.668  1.00 22.76           C
ATOM   2685  O   ARG B   9      99.538  53.452  44.037  1.00 21.72           O
ATOM   2686  CB  ARG B   9     100.738  50.492  45.161  1.00 24.98           C
ATOM   2687  CG  ARG B   9     101.954  49.691  45.639  1.00 31.04           C
ATOM   2688  CD  ARG B   9     101.592  48.439  46.392  1.00 26.45           C
ATOM   2689  NE  ARG B   9     102.739  47.573  46.687  1.00 34.70           N
ATOM   2690  CZ  ARG B   9     103.129  47.266  47.922  1.00 39.40           C
ATOM   2691  NH1 ARG B   9     102.497  47.728  48.993  1.00 40.64           N
ATOM   2692  NH2 ARG B   9     104.182  46.475  48.156  1.00 38.19           N
ATOM   2693  N   THR B  10      99.545  51.709  42.607  1.00 29.44           N
ATOM   2694  CA  THR B  10      98.378  52.151  41.854  1.00 23.64           C
ATOM   2695  C   THR B  10      97.303  51.088  42.118  1.00 27.59           C
ATOM   2696  O   THR B  10      97.648  49.914  42.291  1.00 23.93           O
ATOM   2697  CB  THR B  10      98.632  52.288  40.348  1.00 25.71           C
ATOM   2698  OG1 THR B  10      99.474  51.229  39.879  1.00 31.15           O
ATOM   2699  CG2 THR B  10      99.297  53.629  40.037  1.00 33.46           C
ATOM   2700  N   LEU B  11      96.082  51.548  42.339  1.00 23.03           N
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ATOM	2701	CA	LEU	B	11	94.945	50.621	42.493	1.00	18.79	C
ATOM	2702	C	LEU	B	11	94.659	50.101	41.095	1.00	14.75	C
ATOM	2703	O	LEU	B	11	94.434	50.820	40.105	1.00	19.53	O
ATOM	2704	CB	LEU	B	11	93.703	51.317	42.992	1.00	19.12	C
ATOM	2705	CG	LEU	B	11	92.446	50.438	43.132	1.00	22.71	C
ATOM	2706	CD1	LEU	B	11	92.684	49.287	44.090	1.00	22.76	C
ATOM	2707	CD2	LEU	B	11	91.334	51.306	43.695	1.00	23.60	C
ATOM	2708	N	LEU	B	12	94.670	48.775	40.941	1.00	20.03	N
ATOM	2709	CA	LEU	B	12	94.482	48.192	39.636	1.00	14.43	C
ATOM	2710	C	LEU	B	12	93.109	48.404	39.022	1.00	16.53	C
ATOM	2711	O	LEU	B	12	92.075	48.340	39.716	1.00	17.06	O
ATOM	2712	CB	LEU	B	12	94.730	46.652	39.765	1.00	18.12	C
ATOM	2713	CG	LEU	B	12	94.712	45.939	38.405	1.00	23.15	C
ATOM	2714	CD1	LEU	B	12	95.987	46.244	37.614	1.00	24.69	C
ATOM	2715	CD2	LEU	B	12	94.566	44.423	38.575	1.00	22.51	C
ATOM	2716	N	VAL	B	13	93.076	48.695	37.729	1.00	19.62	N
ATOM	2717	CA	VAL	B	13	91.835	48.843	36.974	1.00	19.10	C
ATOM	2718	C	VAL	B	13	91.086	47.512	36.956	1.00	19.52	C
ATOM	2719	O	VAL	B	13	91.709	46.440	36.878	1.00	18.73	O
ATOM	2720	CB	VAL	B	13	92.151	49.237	35.528	1.00	23.99	C
ATOM	2721	CG1	VAL	B	13	91.012	49.042	34.543	1.00	23.48	C
ATOM	2722	CG2	VAL	B	13	92.603	50.694	35.559	1.00	22.45	C
ATOM	2723	N	ASN	B	14	89.792	47.641	37.161	1.00	16.64	N
ATOM	2724	CA	ASN	B	14	88.902	46.462	37.078	1.00	15.44	C
ATOM	2725	C	ASN	B	14	88.490	46.297	35.627	1.00	18.11	C
ATOM	2726	O	ASN	B	14	87.770	47.107	35.020	1.00	14.84	O
ATOM	2727	CB	ASN	B	14	87.715	46.703	38.013	1.00	14.45	C
ATOM	2728	CG	ASN	B	14	86.631	45.653	37.899	1.00	19.96	C
ATOM	2729	OD1	ASN	B	14	86.414	45.004	36.897	1.00	15.36	O
ATOM	2730	ND2	ASN	B	14	85.848	45.438	38.973	1.00	18.43	N
ATOM	2731	N	SER	B	15	89.019	45.241	34.979	1.00	17.61	N
ATOM	2732	CA	SER	B	15	88.778	45.057	33.557	1.00	16.10	C
ATOM	2733	C	SER	B	15	87.346	44.735	33.185	1.00	20.23	C
ATOM	2734	O	SER	B	15	86.885	45.045	32.065	1.00	18.77	O
ATOM	2735	CB	SER	B	15	89.701	43.954	33.019	1.00	16.38	C
ATOM	2736	OG	SER	B	15	89.481	42.715	33.689	1.00	20.77	O
ATOM	2737	N	ASP	B	16	86.592	44.137	34.073	1.00	19.24	N
ATOM	2738	CA	ASP	B	16	85.190	43.844	33.821	1.00	16.45	C
ATOM	2739	C	ASP	B	16	84.450	45.189	33.744	1.00	17.33	C
ATOM	2740	O	ASP	B	16	83.692	45.492	32.828	1.00	17.87	O
ATOM	2741	CB	ASP	B	16	84.590	42.974	34.935	1.00	20.42	C
ATOM	2742	CG	ASP	B	16	83.077	42.890	34.869	1.00	22.12	C
ATOM	2743	OD1	ASP	B	16	82.524	42.626	33.772	1.00	26.25	O
ATOM	2744	OD2	ASP	B	16	82.412	43.124	35.897	1.00	23.78	O
ATOM	2745	N	TYR	B	17	84.652	45.986	34.804	1.00	16.40	N
ATOM	2746	CA	TYR	B	17	84.039	47.311	34.862	1.00	15.09	C
ATOM	2747	C	TYR	B	17	84.426	48.129	33.628	1.00	16.41	C
ATOM	2748	O	TYR	B	17	83.594	48.788	33.016	1.00	15.14	O
ATOM	2749	CB	TYR	B	17	84.533	48.014	36.119	1.00	12.96	C
ATOM	2750	CG	TYR	B	17	83.977	49.372	36.442	1.00	11.69	C
ATOM	2751	CD1	TYR	B	17	82.630	49.681	36.177	1.00	12.39	C
ATOM	2752	CD2	TYR	B	17	84.772	50.340	37.005	1.00	13.55	C
ATOM	2753	CE1	TYR	B	17	82.134	50.932	36.528	1.00	11.19	C
ATOM	2754	CE2	TYR	B	17	84.272	51.581	37.387	1.00	16.44	C
ATOM	2755	CZ	TYR	B	17	82.951	51.882	37.093	1.00	13.70	C
ATOM	2756	OH	TYR	B	17	82.480	53.119	37.473	1.00	15.10	O
ATOM	2757	N	SER	B	18	85.731	48.186	33.337	1.00	13.96	N
ATOM	2758	CA	SER	B	18	86.225	48.933	32.189	1.00	21.06	C
ATOM	2759	C	SER	B	18	85.520	48.551	30.898	1.00	17.15	C

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ATOM   2760  O   SER B  18      85.025  49.407  30.156  1.00 17.69           O
ATOM   2761  CB  SER B  18      87.759  48.802  32.115  1.00 18.47           C
ATOM   2762  OG  SER B  18      88.274  49.530  31.018  1.00 22.46           O
ATOM   2763  N   SER B  19      85.393  47.235  30.611  1.00 16.95           N
ATOM   2764  CA  SER B  19      84.689  46.797  29.425  1.00 14.73           C
ATOM   2765  C   SER B  19      83.208  47.203  29.374  1.00 15.35           C
ATOM   2766  O   SER B  19      82.698  47.600  28.333  1.00 17.71           O
ATOM   2767  CB  SER B  19      84.740  45.281  29.224  1.00 17.05           C
ATOM   2768  OG ASER B  19      84.336  44.578  30.374  0.50 25.68           O
ATOM   2769  OG BSER B  19      86.059  44.756  29.207  0.50 13.93           O
ATOM   2770  N   LYS B  20      82.539  47.130  30.541  1.00 17.29           N
ATOM   2771  CA  LYS B  20      81.145  47.563  30.583  1.00 15.79           C
ATOM   2772  C   LYS B  20      80.977  49.058  30.370  1.00 20.37           C
ATOM   2773  O   LYS B  20      79.998  49.449  29.734  1.00 16.23           O
ATOM   2774  CB  LYS B  20      80.437  47.108  31.865  1.00 18.21           C
ATOM   2775  CG  LYS B  20      80.500  45.588  31.941  1.00 17.99           C
ATOM   2776  CD  LYS B  20      79.701  44.984  33.082  1.00 20.47           C
ATOM   2777  CE  LYS B  20      80.240  45.293  34.450  1.00 25.73           C
ATOM   2778  NZ  LYS B  20      79.681  44.396  35.515  1.00 15.48           N
ATOM   2779  N   LEU B  21      81.945  49.848  30.786  1.00 17.84           N
ATOM   2780  CA  LEU B  21      81.958  51.284  30.570  1.00 14.20           C
ATOM   2781  C   LEU B  21      82.143  51.611  29.088  1.00 16.72           C
ATOM   2782  O   LEU B  21      81.834  52.739  28.712  1.00 16.34           O
ATOM   2783  CB  LEU B  21      83.073  51.995  31.345  1.00 14.43           C
ATOM   2784  CG  LEU B  21      82.776  52.173  32.845  1.00 18.41           C
ATOM   2785  CD1 LEU B  21      84.055  52.438  33.615  1.00 17.41           C
ATOM   2786  CD2 LEU B  21      81.749  53.281  33.062  1.00 21.73           C
ATOM   2787  N   ASP B  22      82.479  50.650  28.231  1.00 18.10           N
ATOM   2788  CA  ASP B  22      82.612  50.917  26.803  1.00 16.43           C
ATOM   2789  C   ASP B  22      81.260  51.283  26.221  1.00 18.02           C
ATOM   2790  O   ASP B  22      81.183  52.150  25.337  1.00 17.76           O
ATOM   2791  CB  ASP B  22      83.216  49.735  26.032  1.00 14.85           C
ATOM   2792  CG  ASP B  22      84.007  50.276  24.848  1.00 21.61           C
ATOM   2793  OD1 ASP B  22      84.856  51.157  25.068  1.00 21.20           O
ATOM   2794  OD2 ASP B  22      83.709  49.787  23.734  1.00 20.22           O
ATOM   2795  N   GLN B  23      80.180  50.681  26.744  1.00 15.67           N
ATOM   2796  CA  GLN B  23      78.834  51.047  26.331  1.00 14.85           C
ATOM   2797  C   GLN B  23      78.552  52.514  26.610  1.00 17.57           C
ATOM   2798  O   GLN B  23      77.967  53.225  25.786  1.00 20.19           O
ATOM   2799  CB  GLN B  23      77.838  50.153  27.129  1.00 17.93           C
ATOM   2800  CG  GLN B  23      76.388  50.488  26.741  1.00 16.53           C
ATOM   2801  CD  GLN B  23      75.372  49.548  27.329  1.00 19.21           C
ATOM   2802  OE1 GLN B  23      74.175  49.729  27.059  1.00 21.84           O
ATOM   2803  NE2 GLN B  23      75.795  48.555  28.100  1.00 16.64           N
ATOM   2804  N   THR B  24      79.024  53.034  27.761  1.00 15.10           N
ATOM   2805  CA  THR B  24      78.793  54.423  28.128  1.00 17.67           C
ATOM   2806  C   THR B  24      79.559  55.381  27.210  1.00 16.82           C
ATOM   2807  O   THR B  24      79.033  56.425  26.808  1.00 19.08           O
ATOM   2808  CB  THR B  24      79.235  54.676  29.587  1.00 18.56           C
ATOM   2809  OG1 THR B  24      78.812  53.527  30.352  1.00 17.18           O
ATOM   2810  CG2 THR B  24      78.646  55.918  30.192  1.00 16.79           C
ATOM   2811  N   ARG B  25      80.790  54.974  26.923  1.00 17.68           N
ATOM   2812  CA  ARG B  25      81.654  55.784  26.046  1.00 16.68           C
ATOM   2813  C   ARG B  25      80.930  55.912  24.694  1.00 17.50           C
ATOM   2814  O   ARG B  25      80.788  57.022  24.168  1.00 17.95           O
ATOM   2815  CB  ARG B  25      82.984  55.049  25.833  1.00 15.96           C
ATOM   2816  CG  ARG B  25      83.958  55.832  24.919  1.00 16.61           C
ATOM   2817  CD  ARG B  25      85.292  55.070  24.781  1.00 20.12           C
ATOM   2818  NE  ARG B  25      85.047  53.796  24.103  1.00 19.63           N
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ATOM   2819  CZ  ARG B  25      84.876  53.624  22.799  1.00 21.31           C
ATOM   2820  NH1 ARG B  25      85.025  54.639  21.955  1.00 23.29           N
ATOM   2821  NH2 ARG B  25      84.594  52.426  22.306  1.00 18.01           N
ATOM   2822  N   GLN B  26      80.472  54.773  24.177  1.00 15.24           N
ATOM   2823  CA  GLN B  26      79.753  54.727  22.912  1.00 20.13           C
ATOM   2824  C   GLN B  26      78.454  55.526  22.953  1.00 21.90           C
ATOM   2825  O   GLN B  26      78.079  56.177  21.976  1.00 19.59           O
ATOM   2826  CB  GLN B  26      79.452  53.293  22.449  1.00 16.49           C
ATOM   2827  CG  GLN B  26      80.730  52.536  22.062  1.00 19.82           C
ATOM   2828  CD  GLN B  26      80.487  51.135  21.548  1.00 21.12           C
ATOM   2829  OE1 GLN B  26      79.563  50.862  20.790  1.00 23.63           O
ATOM   2830  NE2 GLN B  26      81.333  50.181  21.990  1.00 20.52           N
ATOM   2831  N   ALA B  27      77.719  55.483  24.078  1.00 19.85           N
ATOM   2832  CA  ALA B  27      76.475  56.261  24.107  1.00 17.20           C
ATOM   2833  C   ALA B  27      76.798  57.746  24.065  1.00 17.74           C
ATOM   2834  O   ALA B  27      76.034  58.491  23.405  1.00 21.26           O
ATOM   2835  CB  ALA B  27      75.751  55.913  25.397  1.00 17.02           C
ATOM   2836  N   PHE B  28      77.814  58.219  24.767  1.00 18.68           N
ATOM   2837  CA  PHE B  28      78.171  59.648  24.658  1.00 17.61           C
ATOM   2838  C   PHE B  28      78.571  59.970  23.210  1.00 19.64           C
ATOM   2839  O   PHE B  28      78.146  61.039  22.729  1.00 20.51           O
ATOM   2840  CB  PHE B  28      79.324  60.001  25.599  1.00 17.36           C
ATOM   2841  CG  PHE B  28      78.806  60.206  27.009  1.00 15.23           C
ATOM   2842  CD1 PHE B  28      77.849  61.155  27.289  1.00 17.88           C
ATOM   2843  CD2 PHE B  28      79.338  59.462  28.049  1.00 20.22           C
ATOM   2844  CE1 PHE B  28      77.379  61.358  28.578  1.00 16.98           C
ATOM   2845  CE2 PHE B  28      78.897  59.678  29.345  1.00 15.66           C
ATOM   2846  CZ  PHE B  28      77.912  60.615  29.620  1.00 22.38           C
ATOM   2847  N   LEU B  29      79.315  59.075  22.582  1.00 19.38           N
ATOM   2848  CA  LEU B  29      79.724  59.297  21.189  1.00 22.95           C
ATOM   2849  C   LEU B  29      78.522  59.369  20.260  1.00 25.65           C
ATOM   2850  O   LEU B  29      78.529  60.163  19.315  1.00 24.09           O
ATOM   2851  CB  LEU B  29      80.729  58.239  20.713  1.00 22.39           C
ATOM   2852  CG  LEU B  29      82.107  58.293  21.394  1.00 23.42           C
ATOM   2853  CD1 LEU B  29      82.984  57.090  21.110  1.00 20.32           C
ATOM   2854  CD2 LEU B  29      82.811  59.580  20.990  1.00 22.99           C
ATOM   2855  N   SER B  30      77.447  58.605  20.504  1.00 21.76           N
ATOM   2856  CA  SER B  30      76.290  58.676  19.603  1.00 23.84           C
ATOM   2857  C   SER B  30      75.561  60.000  19.630  1.00 30.86           C
ATOM   2858  O   SER B  30      74.799  60.289  18.694  1.00 27.94           O
ATOM   2859  CB  SER B  30      75.340  57.511  19.882  1.00 28.32           C
ATOM   2860  OG  SER B  30      74.727  57.678  21.156  1.00 24.32           O
ATOM   2861  N   ARG B  31      75.740  60.809  20.663  1.00 25.20           N
ATOM   2862  CA  ARG B  31      75.111  62.122  20.762  1.00 25.58           C
ATOM   2863  C   ARG B  31      76.077  63.255  20.458  1.00 24.05           C
ATOM   2864  O   ARG B  31      75.808  64.405  20.746  1.00 24.27           O
ATOM   2865  CB  ARG B  31      74.550  62.247  22.193  1.00 23.48           C
ATOM   2866  CG  ARG B  31      73.450  61.195  22.340  1.00 23.60           C
ATOM   2867  CD  ARG B  31      72.572  61.452  23.533  1.00 26.31           C
ATOM   2868  NE  ARG B  31      73.241  61.792  24.778  1.00 30.79           N
ATOM   2869  CZ  ARG B  31      73.602  60.915  25.704  1.00 34.02           C
ATOM   2870  NH1 ARG B  31      73.374  59.634  25.507  1.00 21.49           N
ATOM   2871  NH2 ARG B  31      74.193  61.322  26.822  1.00 35.78           N
ATOM   2872  N   GLY B  32      77.267  62.900  19.959  1.00 27.50           N
ATOM   2873  CA  GLY B  32      78.297  63.906  19.677  1.00 27.73           C
ATOM   2874  C   GLY B  32      78.864  64.523  20.950  1.00 26.07           C
ATOM   2875  O   GLY B  32      79.424  65.625  20.952  1.00 24.79           O
ATOM   2876  N   ASP B  33      78.739  63.780  22.072  1.00 21.51           N
ATOM   2877  CA  ASP B  33      79.272  64.322  23.326  1.00 17.26           C
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ATOM	2878	C	ASP	B	33	80.671	63.782	23.531	1.00	23.38	C
ATOM	2879	O	ASP	B	33	80.962	62.783	24.197	1.00	20.23	O
ATOM	2880	CB	ASP	B	33	78.371	63.893	24.506	1.00	18.03	C
ATOM	2881	CG	ASP	B	33	78.755	64.589	25.799	1.00	23.16	C
ATOM	2882	OD1	ASP	B	33	79.847	65.168	25.886	1.00	17.12	O
ATOM	2883	OD2	ASP	B	33	77.919	64.566	26.743	1.00	21.92	O
ATOM	2884	N	GLN	B	34	81.642	64.453	22.890	1.00	18.68	N
ATOM	2885	CA	GLN	B	34	83.032	64.085	22.980	1.00	17.11	C
ATOM	2886	C	GLN	B	34	83.617	64.292	24.378	1.00	16.67	C
ATOM	2887	O	GLN	B	34	84.465	63.483	24.770	1.00	18.63	O
ATOM	2888	CB	GLN	B	34	83.892	64.916	22.005	1.00	21.52	C
ATOM	2889	CG	GLN	B	34	83.495	64.774	20.561	1.00	25.49	C
ATOM	2890	CD	GLN	B	34	83.557	63.381	19.996	1.00	32.14	C
ATOM	2891	OE1	GLN	B	34	84.375	62.547	20.371	1.00	25.68	O
ATOM	2892	NE2	GLN	B	34	82.683	63.054	19.052	1.00	34.50	N
ATOM	2893	N	THR	B	35	83.262	65.383	25.040	1.00	16.15	N
ATOM	2894	CA	THR	B	35	83.786	65.638	26.390	1.00	18.33	C
ATOM	2895	C	THR	B	35	83.466	64.467	27.333	1.00	17.28	C
ATOM	2896	O	THR	B	35	84.391	63.927	27.942	1.00	18.52	O
ATOM	2897	CB	THR	B	35	83.192	66.937	26.953	1.00	20.49	C
ATOM	2898	OG1	THR	B	35	83.582	68.016	26.080	1.00	18.80	O
ATOM	2899	CG2	THR	B	35	83.729	67.268	28.329	1.00	22.79	C
ATOM	2900	N	ASN	B	36	82.220	64.022	27.361	1.00	18.47	N
ATOM	2901	CA	ASN	B	36	81.889	62.914	28.274	1.00	16.82	C
ATOM	2902	C	ASN	B	36	82.424	61.593	27.770	1.00	18.94	C
ATOM	2903	O	ASN	B	36	82.865	60.768	28.585	1.00	18.04	O
ATOM	2904	CB	ASN	B	36	80.404	62.893	28.637	1.00	15.49	C
ATOM	2905	CG	ASN	B	36	80.105	63.991	29.652	1.00	18.24	C
ATOM	2906	OD1	ASN	B	36	80.760	64.136	30.689	1.00	21.37	O
ATOM	2907	ND2	ASN	B	36	79.061	64.787	29.393	1.00	17.27	N
ATOM	2908	N	ALA	B	37	82.450	61.357	26.455	1.00	16.55	N
ATOM	2909	CA	ALA	B	37	83.035	60.129	25.929	1.00	12.94	C
ATOM	2910	C	ALA	B	37	84.479	60.003	26.404	1.00	19.48	C
ATOM	2911	O	ALA	B	37	84.887	58.931	26.854	1.00	16.36	O
ATOM	2912	CB	ALA	B	37	83.006	60.113	24.395	1.00	17.12	C
ATOM	2913	N	ALA	B	38	85.254	61.082	26.287	1.00	19.45	N
ATOM	2914	CA	ALA	B	38	86.647	61.049	26.736	1.00	17.62	C
ATOM	2915	C	ALA	B	38	86.763	60.821	28.234	1.00	16.35	C
ATOM	2916	O	ALA	B	38	87.642	60.068	28.688	1.00	19.97	O
ATOM	2917	CB	ALA	B	38	87.338	62.347	26.340	1.00	15.26	C
ATOM	2918	N	LYS	B	39	85.895	61.385	29.084	1.00	14.88	N
ATOM	2919	CA	LYS	B	39	85.901	61.135	30.520	1.00	15.65	C
ATOM	2920	C	LYS	B	39	85.664	59.647	30.810	1.00	15.04	C
ATOM	2921	O	LYS	B	39	86.327	59.029	31.670	1.00	17.25	O
ATOM	2922	CB	LYS	B	39	84.797	61.963	31.195	1.00	13.01	C
ATOM	2923	CG	LYS	B	39	85.152	63.436	31.336	1.00	16.07	C
ATOM	2924	CD	LYS	B	39	83.981	64.250	31.914	1.00	17.28	C
ATOM	2925	CE	LYS	B	39	84.457	65.717	31.963	1.00	23.58	C
ATOM	2926	NZ	LYS	B	39	83.694	66.512	32.953	1.00	22.14	N
ATOM	2927	N	VAL	B	40	84.767	59.013	30.031	1.00	16.86	N
ATOM	2928	CA	VAL	B	40	84.549	57.570	30.256	1.00	15.40	C
ATOM	2929	C	VAL	B	40	85.834	56.788	29.935	1.00	19.13	C
ATOM	2930	O	VAL	B	40	86.232	55.883	30.659	1.00	17.59	O
ATOM	2931	CB	VAL	B	40	83.418	56.974	29.421	1.00	14.63	C
ATOM	2932	CG1	VAL	B	40	83.327	55.444	29.573	1.00	18.22	C
ATOM	2933	CG2	VAL	B	40	82.066	57.551	29.814	1.00	16.24	C
ATOM	2934	N	LYS	B	41	86.465	57.134	28.806	1.00	17.77	N
ATOM	2935	CA	LYS	B	41	87.713	56.435	28.415	1.00	17.35	C
ATOM	2936	C	LYS	B	41	88.782	56.611	29.461	1.00	17.10	C

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ATOM   2937  O   LYS B  41      89.558  55.679  29.761  1.00 16.37           O
ATOM   2938  CB  LYS B  41      88.091  56.942  27.004  1.00 15.63           C
ATOM   2939  CG  LYS B  41      89.337  56.336  26.374  1.00 16.16           C
ATOM   2940  CD  LYS B  41      89.330  56.705  24.910  1.00 20.47           C
ATOM   2941  CE  LYS B  41      90.499  56.198  24.097  1.00 32.61           C
ATOM   2942  NZ  LYS B  41      91.783  56.437  24.797  1.00 25.93           N
ATOM   2943  N   TYR B  42      88.895  57.790  30.084  1.00 15.00           N
ATOM   2944  CA  TYR B  42      89.826  57.980  31.171  1.00 19.39           C
ATOM   2945  C   TYR B  42      89.511  56.996  32.293  1.00 18.06           C
ATOM   2946  O   TYR B  42      90.402  56.343  32.806  1.00 15.47           O
ATOM   2947  CB  TYR B  42      89.780  59.402  31.721  1.00 19.03           C
ATOM   2948  CG  TYR B  42      90.687  59.655  32.903  1.00 21.12           C
ATOM   2949  CD1 TYR B  42      92.000  60.061  32.704  1.00 20.08           C
ATOM   2950  CD2 TYR B  42      90.259  59.467  34.208  1.00 18.89           C
ATOM   2951  CE1 TYR B  42      92.845  60.265  33.780  1.00 21.84           C
ATOM   2952  CE2 TYR B  42      91.083  59.685  35.292  1.00 21.59           C
ATOM   2953  CZ  TYR B  42      92.386  60.079  35.060  1.00 25.44           C
ATOM   2954  OH  TYR B  42      93.258  60.300  36.103  1.00 28.09           O
ATOM   2955  N   VAL B  43      88.222  56.872  32.660  1.00 16.57           N
ATOM   2956  CA  VAL B  43      87.924  55.927  33.751  1.00 17.22           C
ATOM   2957  C   VAL B  43      88.268  54.492  33.369  1.00 18.41           C
ATOM   2958  O   VAL B  43      88.787  53.694  34.173  1.00 19.16           O
ATOM   2959  CB  VAL B  43      86.443  56.066  34.123  1.00 15.91           C
ATOM   2960  CG1 VAL B  43      86.060  55.029  35.183  1.00 15.52           C
ATOM   2961  CG2 VAL B  43      86.229  57.462  34.671  1.00 15.11           C
ATOM   2962  N   GLN B  44      88.045  54.148  32.127  1.00 16.42           N
ATOM   2963  CA  GLN B  44      88.324  52.852  31.572  1.00 14.39           C
ATOM   2964  C   GLN B  44      89.799  52.482  31.679  1.00 16.33           C
ATOM   2965  O   GLN B  44      90.153  51.337  31.946  1.00 18.86           O
ATOM   2966  CB  GLN B  44      87.958  52.831  30.087  1.00 14.26           C
ATOM   2967  CG  GLN B  44      86.486  52.590  29.827  1.00 17.37           C
ATOM   2968  CD  GLN B  44      86.197  52.495  28.344  1.00 17.65           C
ATOM   2969  OE1 GLN B  44      86.357  53.467  27.614  1.00 17.67           O
ATOM   2970  NE2 GLN B  44      85.749  51.319  27.909  1.00 18.10           N
ATOM   2971  N   GLU B  45      90.666  53.451  31.406  1.00 18.18           N
ATOM   2972  CA  GLU B  45      92.090  53.186  31.389  1.00 18.82           C
ATOM   2973  C   GLU B  45      92.866  53.515  32.636  1.00 20.67           C
ATOM   2974  O   GLU B  45      93.924  52.875  32.827  1.00 19.61           O
ATOM   2975  CB  GLU B  45      92.673  54.042  30.215  1.00 17.98           C
ATOM   2976  CG  GLU B  45      92.159  53.564  28.877  1.00 18.26           C
ATOM   2977  CD  GLU B  45      92.554  54.418  27.674  1.00 24.06           C
ATOM   2978  OE1 GLU B  45      93.130  55.502  27.863  1.00 30.46           O
ATOM   2979  OE2 GLU B  45      92.205  53.983  26.560  1.00 29.87           O
ATOM   2980  N   LYS B  46      92.454  54.525  33.414  1.00 15.25           N
ATOM   2981  CA  LYS B  46      93.260  55.020  34.515  1.00 18.10           C
ATOM   2982  C   LYS B  46      92.736  54.996  35.926  1.00 20.90           C
ATOM   2983  O   LYS B  46      93.491  55.354  36.841  1.00 23.35           O
ATOM   2984  CB  LYS B  46      93.611  56.497  34.178  1.00 22.72           C
ATOM   2985  CG  LYS B  46      94.615  56.617  33.044  1.00 30.17           C
ATOM   2986  CD  LYS B  46      94.268  57.636  31.994  1.00 38.77           C
ATOM   2987  CE  LYS B  46      95.380  57.862  30.984  1.00 43.17           C
ATOM   2988  NZ  LYS B  46      94.911  58.643  29.800  1.00 37.54           N
ATOM   2989  N   VAL B  47      91.489  54.630  36.166  1.00 17.52           N
ATOM   2990  CA  VAL B  47      90.884  54.655  37.490  1.00 16.01           C
ATOM   2991  C   VAL B  47      90.772  53.239  38.066  1.00 14.36           C
ATOM   2992  O   VAL B  47      90.044  52.459  37.492  1.00 18.15           O
ATOM   2993  CB  VAL B  47      89.506  55.334  37.430  1.00 15.12           C
ATOM   2994  CG1 VAL B  47      88.909  55.406  38.832  1.00 16.31           C
ATOM   2995  CG2 VAL B  47      89.727  56.780  36.937  1.00 19.69           C
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ATOM	2996	N	GLY	B	48	91.503	52.943	39.131	1.00	16.55	N
ATOM	2997	CA	GLY	B	48	91.387	51.585	39.695	1.00	19.29	C
ATOM	2998	C	GLY	B	48	90.043	51.399	40.401	1.00	18.66	C
ATOM	2999	O	GLY	B	48	89.530	52.341	40.986	1.00	14.72	O
ATOM	3000	N	THR	B	49	89.494	50.198	40.339	1.00	16.12	N
ATOM	3001	CA	THR	B	49	88.237	49.855	41.041	1.00	14.90	C
ATOM	3002	C	THR	B	49	88.393	48.415	41.533	1.00	17.66	C
ATOM	3003	O	THR	B	49	89.005	47.580	40.846	1.00	15.77	O
ATOM	3004	CB	THR	B	49	87.037	49.926	40.087	1.00	17.65	C
ATOM	3005	OG1	THR	B	49	86.992	51.266	39.546	1.00	15.90	O
ATOM	3006	CG2	THR	B	49	85.672	49.699	40.741	1.00	16.18	C
ATOM	3007	N	PHE	B	50	87.760	48.147	42.674	1.00	12.91	N
ATOM	3008	CA	PHE	B	50	87.783	46.809	43.232	1.00	12.56	C
ATOM	3009	C	PHE	B	50	86.928	45.873	42.388	1.00	14.04	C
ATOM	3010	O	PHE	B	50	85.972	46.212	41.701	1.00	14.93	O
ATOM	3011	CB	PHE	B	50	87.171	46.812	44.639	1.00	16.20	C
ATOM	3012	CG	PHE	B	50	88.114	47.169	45.740	1.00	14.17	C
ATOM	3013	CD1	PHE	B	50	88.834	48.355	45.750	1.00	17.64	C
ATOM	3014	CD2	PHE	B	50	88.291	46.322	46.824	1.00	17.20	C
ATOM	3015	CE1	PHE	B	50	89.697	48.670	46.788	1.00	17.52	C
ATOM	3016	CE2	PHE	B	50	89.168	46.599	47.857	1.00	20.19	C
ATOM	3017	CZ	PHE	B	50	89.882	47.785	47.844	1.00	17.21	C
ATOM	3018	N	TYR	B	51	87.373	44.606	42.445	1.00	14.41	N
ATOM	3019	CA	TYR	B	51	86.674	43.510	41.828	1.00	13.73	C
ATOM	3020	C	TYR	B	51	85.790	42.829	42.877	1.00	14.03	C
ATOM	3021	O	TYR	B	51	86.288	42.466	43.930	1.00	15.34	O
ATOM	3022	CB	TYR	B	51	87.646	42.442	41.381	1.00	12.64	C
ATOM	3023	CG	TYR	B	51	88.506	42.798	40.204	1.00	13.85	C
ATOM	3024	CD1	TYR	B	51	89.572	43.690	40.443	1.00	15.01	C
ATOM	3025	CD2	TYR	B	51	88.330	42.263	38.939	1.00	15.30	C
ATOM	3026	CE1	TYR	B	51	90.434	44.011	39.409	1.00	17.70	C
ATOM	3027	CE2	TYR	B	51	89.183	42.587	37.887	1.00	18.70	C
ATOM	3028	CZ	TYR	B	51	90.209	43.475	38.170	1.00	15.33	C
ATOM	3029	OH	TYR	B	51	91.095	43.819	37.155	1.00	16.64	O
ATOM	3030	N	TRP	B	52	84.484	42.728	42.594	1.00	11.83	N
ATOM	3031	CA	TRP	B	52	83.585	42.122	43.579	1.00	12.69	C
ATOM	3032	C	TRP	B	52	83.409	40.620	43.379	1.00	14.01	C
ATOM	3033	O	TRP	B	52	83.018	40.188	42.279	1.00	14.38	O
ATOM	3034	CB	TRP	B	52	82.193	42.751	43.450	1.00	14.32	C
ATOM	3035	CG	TRP	B	52	82.162	44.154	43.985	1.00	14.78	C
ATOM	3036	CD1	TRP	B	52	82.825	45.261	43.503	1.00	17.01	C
ATOM	3037	CD2	TRP	B	52	81.431	44.580	45.136	1.00	10.23	C
ATOM	3038	NE1	TRP	B	52	82.527	46.344	44.300	1.00	12.92	N
ATOM	3039	CE2	TRP	B	52	81.691	45.947	45.313	1.00	11.33	C
ATOM	3040	CE3	TRP	B	52	80.575	43.916	46.032	1.00	13.21	C
ATOM	3041	CZ2	TRP	B	52	81.101	46.657	46.346	1.00	14.79	C
ATOM	3042	CZ3	TRP	B	52	79.982	44.607	47.073	1.00	11.88	C
ATOM	3043	CH2	TRP	B	52	80.254	45.988	47.191	1.00	14.19	C
ATOM	3044	N	ILE	B	53	83.794	39.876	44.423	1.00	11.74	N
ATOM	3045	CA	ILE	B	53	83.692	38.397	44.302	1.00	14.76	C
ATOM	3046	C	ILE	B	53	82.428	38.000	45.018	1.00	11.18	C
ATOM	3047	O	ILE	B	53	82.357	37.517	46.150	1.00	13.16	O
ATOM	3048	CB	ILE	B	53	84.928	37.720	44.892	1.00	16.03	C
ATOM	3049	CG1	ILE	B	53	86.217	38.340	44.377	1.00	11.84	C
ATOM	3050	CG2	ILE	B	53	84.912	36.226	44.483	1.00	15.36	C
ATOM	3051	CD1	ILE	B	53	86.356	38.462	42.856	1.00	14.62	C
ATOM	3052	N	SER	B	54	81.294	38.352	44.344	1.00	15.26	N
ATOM	3053	CA	SER	B	54	79.995	38.297	45.007	1.00	17.10	C
ATOM	3054	C	SER	B	54	79.253	36.975	45.018	1.00	12.48	C

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ATOM   3055  O   SER B  54      78.137  36.937  45.535  1.00 14.16           O
ATOM   3056  CB  SER B  54      79.088  39.388  44.431  1.00 17.50           C
ATOM   3057  OG ASER B  54      79.760  40.633  44.392  0.50 14.39           O
ATOM   3058  OG BSER B  54      78.982  39.340  43.029  0.50 11.72           O
ATOM   3059  N   ASN B  55      79.855  35.944  44.435  1.00 12.63           N
ATOM   3060  CA  ASN B  55      79.276  34.607  44.451  1.00 13.77           C
ATOM   3061  C   ASN B  55      80.417  33.640  44.177  1.00 18.96           C
ATOM   3062  O   ASN B  55      81.551  34.064  43.897  1.00 15.24           O
ATOM   3063  CB  ASN B  55      78.063  34.514  43.523  1.00 10.44           C
ATOM   3064  CG  ASN B  55      78.380  34.867  42.080  1.00 15.09           C
ATOM   3065  OD1 ASN B  55      79.345  34.340  41.549  1.00 15.91           O
ATOM   3066  ND2 ASN B  55      77.637  35.804  41.488  1.00 17.05           N
ATOM   3067  N   ILE B  56      80.140  32.340  44.256  1.00 14.37           N
ATOM   3068  CA  ILE B  56      81.168  31.330  44.010  1.00 12.05           C
ATOM   3069  C   ILE B  56      81.582  31.291  42.553  1.00 15.02           C
ATOM   3070  O   ILE B  56      82.787  31.241  42.259  1.00 16.51           O
ATOM   3071  CB  ILE B  56      80.609  29.989  44.520  1.00 13.92           C
ATOM   3072  CG1 ILE B  56      80.647  29.953  46.060  1.00 14.27           C
ATOM   3073  CG2 ILE B  56      81.303  28.780  43.946  1.00 13.39           C
ATOM   3074  CD1 ILE B  56      79.734  28.896  46.661  1.00 18.34           C
ATOM   3075  N   PHE B  57      80.670  31.496  41.607  1.00 12.96           N
ATOM   3076  CA  PHE B  57      81.087  31.527  40.187  1.00 11.15           C
ATOM   3077  C   PHE B  57      82.144  32.597  39.972  1.00 18.24           C
ATOM   3078  O   PHE B  57      83.073  32.351  39.185  1.00 14.89           O
ATOM   3079  CB  PHE B  57      79.825  31.815  39.333  1.00 17.42           C
ATOM   3080  CG  PHE B  57      80.111  32.010  37.873  1.00 18.10           C
ATOM   3081  CD1 PHE B  57      80.429  33.246  37.355  1.00 16.97           C
ATOM   3082  CD2 PHE B  57      80.052  30.934  36.994  1.00 14.67           C
ATOM   3083  CE1 PHE B  57      80.738  33.428  36.019  1.00 19.79           C
ATOM   3084  CE2 PHE B  57      80.309  31.126  35.654  1.00 17.22           C
ATOM   3085  CZ  PHE B  57      80.668  32.365  35.150  1.00 15.53           C
ATOM   3086  N   LEU B  58      82.051  33.749  40.663  1.00 12.88           N
ATOM   3087  CA  LEU B  58      82.941  34.882  40.453  1.00 15.64           C
ATOM   3088  C   LEU B  58      84.292  34.713  41.117  1.00 16.65           C
ATOM   3089  O   LEU B  58      85.169  35.545  40.902  1.00 13.78           O
ATOM   3090  CB  LEU B  58      82.288  36.211  40.863  1.00 14.15           C
ATOM   3091  CG  LEU B  58      81.170  36.613  39.900  1.00 15.42           C
ATOM   3092  CD1 LEU B  58      80.372  37.740  40.500  1.00 15.14           C
ATOM   3093  CD2 LEU B  58      81.753  36.966  38.533  1.00 16.23           C
ATOM   3094  N   LEU B  59      84.493  33.550  41.768  1.00 14.14           N
ATOM   3095  CA  LEU B  59      85.882  33.264  42.190  1.00 14.17           C
ATOM   3096  C   LEU B  59      86.811  33.291  40.991  1.00 15.97           C
ATOM   3097  O   LEU B  59      87.976  33.685  41.212  1.00 17.98           O
ATOM   3098  CB  LEU B  59      85.985  31.894  42.870  1.00 12.98           C
ATOM   3099  CG  LEU B  59      85.333  31.756  44.252  1.00 16.55           C
ATOM   3100  CD1 LEU B  59      85.121  30.298  44.621  1.00 19.47           C
ATOM   3101  CD2 LEU B  59      86.193  32.475  45.310  1.00 17.68           C
ATOM   3102  N   ARG B  60      86.369  33.070  39.762  1.00 16.56           N
ATOM   3103  CA  ARG B  60      87.252  33.082  38.583  1.00 18.08           C
ATOM   3104  C   ARG B  60      87.752  34.471  38.264  1.00 20.54           C
ATOM   3105  O   ARG B  60      88.803  34.657  37.644  1.00 20.75           O
ATOM   3106  CB  ARG B  60      86.466  32.516  37.411  1.00 21.86           C
ATOM   3107  CG  ARG B  60      85.219  33.309  37.020  1.00 21.71           C
ATOM   3108  CD  ARG B  60      84.396  32.497  36.023  1.00 28.01           C
ATOM   3109  NE  ARG B  60      83.808  31.296  36.593  1.00 21.97           N
ATOM   3110  CZ  ARG B  60      83.596  30.115  36.046  1.00 27.05           C
ATOM   3111  NH1 ARG B  60      83.941  29.850  34.800  1.00 22.97           N
ATOM   3112  NH2 ARG B  60      83.017  29.129  36.742  1.00 32.90           N
ATOM   3113  N   ASP B  61      87.031  35.497  38.730  1.00 13.93           N
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ATOM   3114  CA  ASP B  61      87.471  36.869  38.545  1.00 17.59           C
ATOM   3115  C   ASP B  61      88.704  37.179  39.381  1.00 22.52           C
ATOM   3116  O   ASP B  61      89.421  38.145  39.094  1.00 17.88           O
ATOM   3117  CB  ASP B  61      86.353  37.862  38.885  1.00 16.90           C
ATOM   3118  CG  ASP B  61      85.552  38.222  37.655  1.00 24.41           C
ATOM   3119  OD1 ASP B  61      85.883  37.820  36.516  1.00 26.33           O
ATOM   3120  OD2 ASP B  61      84.560  38.958  37.845  1.00 20.11           O
ATOM   3121  N   ILE B  62      88.965  36.384  40.410  1.00 15.89           N
ATOM   3122  CA  ILE B  62      90.211  36.540  41.174  1.00 22.74           C
ATOM   3123  C   ILE B  62      91.347  36.208  40.208  1.00 24.25           C
ATOM   3124  O   ILE B  62      92.316  37.001  40.151  1.00 20.29           O
ATOM   3125  CB  ILE B  62      90.245  35.700  42.458  1.00 17.44           C
ATOM   3126  CG1 ILE B  62      89.279  36.139  43.559  1.00 15.61           C
ATOM   3127  CG2 ILE B  62      91.691  35.767  43.043  1.00 16.55           C
ATOM   3128  CD1 ILE B  62      88.989  35.140  44.653  1.00 21.53           C
ATOM   3129  N   ASP B  63      91.263  35.153  39.375  1.00 20.12           N
ATOM   3130  CA  ASP B  63      92.325  34.842  38.422  1.00 22.02           C
ATOM   3131  C   ASP B  63      92.476  35.889  37.338  1.00 28.10           C
ATOM   3132  O   ASP B  63      93.570  36.181  36.843  1.00 26.70           O
ATOM   3133  CB  ASP B  63      92.099  33.458  37.787  1.00 26.51           C
ATOM   3134  CG  ASP B  63      92.012  32.385  38.855  1.00 25.59           C
ATOM   3135  OD1 ASP B  63      92.913  32.296  39.718  1.00 32.65           O
ATOM   3136  OD2 ASP B  63      91.021  31.610  38.867  1.00 26.76           O
ATOM   3137  N   VAL B  64      91.387  36.560  36.943  1.00 19.62           N
ATOM   3138  CA  VAL B  64      91.463  37.621  35.960  1.00 18.25           C
ATOM   3139  C   VAL B  64      92.214  38.797  36.588  1.00 21.72           C
ATOM   3140  O   VAL B  64      93.012  39.409  35.887  1.00 25.35           O
ATOM   3141  CB  VAL B  64      90.051  38.101  35.562  1.00 25.41           C
ATOM   3142  CG1 VAL B  64      90.120  39.394  34.752  1.00 22.56           C
ATOM   3143  CG2 VAL B  64      89.294  37.027  34.798  1.00 22.99           C
ATOM   3144  N   ALA B  65      91.924  39.139  37.848  1.00 18.19           N
ATOM   3145  CA  ALA B  65      92.546  40.304  38.485  1.00 17.64           C
ATOM   3146  C   ALA B  65      94.052  40.091  38.656  1.00 22.70           C
ATOM   3147  O   ALA B  65      94.871  40.970  38.477  1.00 23.51           O
ATOM   3148  CB  ALA B  65      91.934  40.531  39.859  1.00 15.79           C
ATOM   3149  N   ILE B  66      94.375  38.839  38.975  1.00 21.84           N
ATOM   3150  CA  ILE B  66      95.781  38.440  39.170  1.00 28.23           C
ATOM   3151  C   ILE B  66      96.564  38.586  37.880  1.00 27.27           C
ATOM   3152  O   ILE B  66      97.681  39.142  37.852  1.00 25.81           O
ATOM   3153  CB  ILE B  66      95.791  36.984  39.710  1.00 18.66           C
ATOM   3154  CG1 ILE B  66      95.610  36.997  41.200  1.00 19.19           C
ATOM   3155  CG2 ILE B  66      97.156  36.353  39.354  1.00 30.76           C
ATOM   3156  CD1 ILE B  66      95.212  35.770  41.980  1.00 22.60           C
ATOM   3157  N   GLN B  67      96.014  38.095  36.786  1.00 23.96           N
ATOM   3158  CA  GLN B  67      96.538  38.148  35.446  1.00 26.59           C
ATOM   3159  C   GLN B  67      96.741  39.613  35.061  1.00 31.49           C
ATOM   3160  O   GLN B  67      97.813  39.964  34.573  1.00 30.87           O
ATOM   3161  CB  GLN B  67      95.599  37.486  34.453  1.00 30.04           C
ATOM   3162  CG  GLN B  67      95.974  37.661  32.987  1.00 38.09           C
ATOM   3163  CD  GLN B  67      95.313  36.596  32.124  1.00 38.32           C
ATOM   3164  OE1 GLN B  67      94.872  35.587  32.686  1.00 44.84           O
ATOM   3165  NE2 GLN B  67      95.272  36.846  30.822  1.00 43.52           N
ATOM   3166  N   ASN B  68      95.729  40.435  35.384  1.00 26.37           N
ATOM   3167  CA  ASN B  68      95.856  41.857  35.070  1.00 26.18           C
ATOM   3168  C   ASN B  68      96.902  42.518  35.948  1.00 24.99           C
ATOM   3169  O   ASN B  68      97.641  43.373  35.419  1.00 27.97           O
ATOM   3170  CB  ASN B  68      94.489  42.548  35.204  1.00 22.86           C
ATOM   3171  CG  ASN B  68      93.435  42.064  34.261  1.00 23.04           C
ATOM   3172  OD1 ASN B  68      93.593  41.520  33.154  1.00 24.93           O
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ATOM	3173	ND2	ASN	B	68	92.163	42.255	34.667	1.00	19.91	N
ATOM	3174	N	ALA	B	69	97.081	42.130	37.202	1.00	24.84	N
ATOM	3175	CA	ALA	B	69	98.108	42.702	38.062	1.00	17.02	C
ATOM	3176	C	ALA	B	69	99.505	42.250	37.579	1.00	28.34	C
ATOM	3177	O	ALA	B	69	100.468	42.988	37.819	1.00	29.63	O
ATOM	3178	CB	ALA	B	69	97.941	42.370	39.523	1.00	21.95	C
ATOM	3179	N	ARG	B	70	99.608	41.108	36.908	1.00	28.89	N
ATOM	3180	CA	ARG	B	70	100.912	40.675	36.369	1.00	27.69	C
ATOM	3181	C	ARG	B	70	101.172	41.393	35.055	1.00	34.67	C
ATOM	3182	O	ARG	B	70	102.314	41.815	34.788	1.00	38.31	O
ATOM	3183	CB	ARG	B	70	100.962	39.139	36.232	1.00	28.12	C
ATOM	3184	CG	ARG	B	70	101.205	38.453	37.562	1.00	20.96	C
ATOM	3185	CD	ARG	B	70	101.046	36.944	37.597	1.00	25.41	C
ATOM	3186	NE	ARG	B	70	101.052	36.271	38.872	1.00	22.35	N
ATOM	3187	CZ	ARG	B	70	100.582	35.084	39.331	1.00	17.36	C
ATOM	3188	NH1	ARG	B	70	99.918	34.222	38.627	1.00	29.75	N
ATOM	3189	NH2	ARG	B	70	100.766	34.790	40.617	1.00	26.53	N
ATOM	3190	N	ALA	B	71	100.161	41.596	34.219	1.00	30.93	N
ATOM	3191	CA	ALA	B	71	100.294	42.318	32.968	1.00	30.96	C
ATOM	3192	C	ALA	B	71	100.677	43.782	33.204	1.00	37.18	C
ATOM	3193	O	ALA	B	71	101.481	44.352	32.459	1.00	39.92	O
ATOM	3194	CB	ALA	B	71	99.018	42.308	32.147	1.00	29.82	C
ATOM	3195	N	ALA	B	72	100.094	44.395	34.233	1.00	32.39	N
ATOM	3196	CA	ALA	B	72	100.363	45.798	34.516	1.00	33.17	C
ATOM	3197	C	ALA	B	72	101.778	45.996	35.037	1.00	37.85	C
ATOM	3198	O	ALA	B	72	102.537	46.828	34.537	1.00	31.27	O
ATOM	3199	CB	ALA	B	72	99.402	46.323	35.586	1.00	31.02	C
ATOM	3200	N	LYS	B	73	102.150	45.181	36.027	1.00	36.44	N
ATOM	3201	CA	LYS	B	73	103.486	45.309	36.615	1.00	41.38	C
ATOM	3202	C	LYS	B	73	104.577	44.894	35.642	1.00	38.65	C
ATOM	3203	O	LYS	B	73	105.734	45.315	35.790	1.00	41.24	O
ATOM	3204	CB	LYS	B	73	103.547	44.645	37.973	1.00	46.45	C
ATOM	3205	CG	LYS	B	73	104.074	43.240	38.070	1.00	44.37	C
ATOM	3206	CD	LYS	B	73	105.446	43.196	38.718	1.00	51.56	C
ATOM	3207	CE	LYS	B	73	105.404	43.638	40.174	1.00	55.82	C
ATOM	3208	NZ	LYS	B	73	104.882	42.582	41.083	1.00	57.90	N
ATOM	3209	N	ALA	B	74	104.258	44.186	34.569	1.00	40.93	N
ATOM	3210	CA	ALA	B	74	105.166	43.862	33.486	1.00	44.54	C
ATOM	3211	C	ALA	B	74	105.270	45.016	32.486	1.00	46.62	C
ATOM	3212	O	ALA	B	74	106.250	45.084	31.734	1.00	46.58	O
ATOM	3213	CB	ALA	B	74	104.759	42.604	32.742	1.00	40.60	C
ATOM	3214	N	ARG	B	75	104.321	45.956	32.501	1.00	44.45	N
ATOM	3215	CA	ARG	B	75	104.414	47.111	31.609	1.00	43.68	C
ATOM	3216	C	ARG	B	75	105.075	48.270	32.358	1.00	40.42	C
ATOM	3217	O	ARG	B	75	105.136	49.398	31.869	1.00	44.75	O
ATOM	3218	CB	ARG	B	75	103.095	47.509	30.995	1.00	47.64	C
ATOM	3219	CG	ARG	B	75	102.059	48.208	31.837	1.00	50.87	C
ATOM	3220	CD	ARG	B	75	100.792	48.450	31.029	1.00	55.65	C
ATOM	3221	NE	ARG	B	75	100.644	47.576	29.868	1.00	51.77	N
ATOM	3222	CZ	ARG	B	75	99.612	46.760	29.660	1.00	54.53	C
ATOM	3223	NH1	ARG	B	75	98.626	46.716	30.555	1.00	45.97	N
ATOM	3224	NH2	ARG	B	75	99.570	46.002	28.568	1.00	49.67	N
ATOM	3225	N	GLY	B	76	105.608	47.960	33.530	1.00	37.48	N
ATOM	3226	CA	GLY	B	76	106.335	48.878	34.357	1.00	38.17	C
ATOM	3227	C	GLY	B	76	105.619	49.433	35.566	1.00	40.99	C
ATOM	3228	O	GLY	B	76	106.260	50.163	36.330	1.00	40.23	O
ATOM	3229	N	GLU	B	77	104.338	49.116	35.769	1.00	39.57	N
ATOM	3230	CA	GLU	B	77	103.619	49.694	36.910	1.00	35.86	C
ATOM	3231	C	GLU	B	77	103.784	48.907	38.201	1.00	31.34	C

ATOM	3232	O	GLU	B	77	104.348	47.812	38.247	1.00	34.21	O
ATOM	3233	CB	GLU	B	77	102.148	49.842	36.527	1.00	36.57	C
ATOM	3234	CG	GLU	B	77	101.910	50.384	35.118	1.00	32.98	C
ATOM	3235	CD	GLU	B	77	100.472	50.184	34.691	1.00	35.04	C
ATOM	3236	OE1	GLU	B	77	99.679	49.697	35.529	1.00	39.41	O
ATOM	3237	OE2	GLU	B	77	100.175	50.525	33.532	1.00	39.68	O
ATOM	3238	N	ASN	B	78	103.270	49.434	39.300	1.00	29.74	N
ATOM	3239	CA	ASN	B	78	103.318	48.849	40.626	1.00	33.87	C
ATOM	3240	C	ASN	B	78	101.927	48.815	41.259	1.00	29.45	C
ATOM	3241	O	ASN	B	78	101.564	49.642	42.088	1.00	29.17	O
ATOM	3242	CB	ASN	B	78	104.207	49.732	41.502	1.00	40.90	C
ATOM	3243	CG	ASN	B	78	104.759	48.982	42.691	1.00	53.71	C
ATOM	3244	OD1	ASN	B	78	104.943	49.534	43.779	1.00	56.49	O
ATOM	3245	ND2	ASN	B	78	105.032	47.692	42.515	1.00	57.03	N
ATOM	3246	N	PRO	B	79	101.166	47.796	40.934	1.00	30.67	N
ATOM	3247	CA	PRO	B	79	99.756	47.717	41.296	1.00	24.65	C
ATOM	3248	C	PRO	B	79	99.415	47.064	42.601	1.00	24.32	C
ATOM	3249	O	PRO	B	79	100.176	46.309	43.201	1.00	25.61	O
ATOM	3250	CB	PRO	B	79	99.142	46.816	40.199	1.00	25.81	C
ATOM	3251	CG	PRO	B	79	100.299	45.838	40.064	1.00	27.62	C
ATOM	3252	CD	PRO	B	79	101.529	46.745	39.972	1.00	31.59	C
ATOM	3253	N	ILE	B	80	98.196	47.424	43.059	1.00	20.77	N
ATOM	3254	CA	ILE	B	80	97.637	46.743	44.226	1.00	19.20	C
ATOM	3255	C	ILE	B	80	96.211	46.367	43.762	1.00	23.06	C
ATOM	3256	O	ILE	B	80	95.556	47.217	43.192	1.00	20.46	O
ATOM	3257	CB	ILE	B	80	97.649	47.484	45.527	1.00	19.08	C
ATOM	3258	CG1	ILE	B	80	96.951	46.679	46.638	1.00	18.64	C
ATOM	3259	CG2	ILE	B	80	96.981	48.851	45.340	1.00	23.47	C
ATOM	3260	CD1	ILE	B	80	97.181	47.154	48.044	1.00	17.98	C
ATOM	3261	N	VAL	B	81	95.838	45.122	43.976	1.00	18.21	N
ATOM	3262	CA	VAL	B	81	94.534	44.615	43.513	1.00	18.86	C
ATOM	3263	C	VAL	B	81	93.512	44.736	44.620	1.00	21.20	C
ATOM	3264	O	VAL	B	81	93.661	44.252	45.748	1.00	18.06	O
ATOM	3265	CB	VAL	B	81	94.658	43.113	43.125	1.00	23.72	C
ATOM	3266	CG1	VAL	B	81	93.311	42.502	42.727	1.00	16.06	C
ATOM	3267	CG2	VAL	B	81	95.608	42.840	41.968	1.00	23.95	C
ATOM	3268	N	GLY	B	82	92.378	45.440	44.324	1.00	18.45	N
ATOM	3269	CA	GLY	B	82	91.308	45.487	45.330	1.00	15.70	C
ATOM	3270	C	GLY	B	82	90.294	44.370	45.026	1.00	13.73	C
ATOM	3271	O	GLY	B	82	89.804	44.235	43.929	1.00	17.77	O
ATOM	3272	N	LEU	B	83	89.963	43.631	46.085	1.00	14.05	N
ATOM	3273	CA	LEU	B	83	88.964	42.558	45.968	1.00	17.56	C
ATOM	3274	C	LEU	B	83	87.924	42.737	47.057	1.00	15.62	C
ATOM	3275	O	LEU	B	83	88.271	43.147	48.177	1.00	16.11	O
ATOM	3276	CB	LEU	B	83	89.571	41.157	46.130	1.00	16.40	C
ATOM	3277	CG	LEU	B	83	90.630	40.728	45.112	1.00	14.56	C
ATOM	3278	CD1	LEU	B	83	91.176	39.351	45.502	1.00	18.19	C
ATOM	3279	CD2	LEU	B	83	90.104	40.735	43.678	1.00	14.73	C
ATOM	3280	N	VAL	B	84	86.627	42.452	46.736	1.00	12.40	N
ATOM	3281	CA	VAL	B	84	85.581	42.466	47.717	1.00	9.97	C
ATOM	3282	C	VAL	B	84	85.119	41.030	48.067	1.00	12.63	C
ATOM	3283	O	VAL	B	84	84.737	40.324	47.149	1.00	14.90	O
ATOM	3284	CB	VAL	B	84	84.314	43.259	47.363	1.00	11.26	C
ATOM	3285	CG1	VAL	B	84	83.414	43.471	48.557	1.00	15.71	C
ATOM	3286	CG2	VAL	B	84	84.746	44.684	46.936	1.00	12.74	C
ATOM	3287	N	LEU	B	85	85.335	40.635	49.312	1.00	12.20	N
ATOM	3288	CA	LEU	B	85	84.902	39.271	49.736	1.00	16.61	C
ATOM	3289	C	LEU	B	85	83.483	39.484	50.236	1.00	16.55	C
ATOM	3290	O	LEU	B	85	83.281	40.195	51.230	1.00	14.38	O

ATOM	3291	CB	LEU	B	85	85.889	38.744	50.751	1.00	16.92	C
ATOM	3292	CG	LEU	B	85	85.764	37.272	51.235	1.00	11.24	C
ATOM	3293	CD1	LEU	B	85	87.185	36.884	51.677	1.00	15.64	C
ATOM	3294	CD2	LEU	B	85	84.716	37.100	52.277	1.00	18.62	C
ATOM	3295	N	TYR	B	86	82.498	38.954	49.465	1.00	13.72	N
ATOM	3296	CA	TYR	B	86	81.104	39.294	49.795	1.00	12.98	C
ATOM	3297	C	TYR	B	86	80.179	38.128	49.427	1.00	12.07	C
ATOM	3298	O	TYR	B	86	79.588	38.120	48.336	1.00	14.09	O
ATOM	3299	CB	TYR	B	86	80.739	40.507	48.922	1.00	16.67	C
ATOM	3300	CG	TYR	B	86	79.377	41.112	49.048	1.00	12.71	C
ATOM	3301	CD1	TYR	B	86	78.819	41.467	50.254	1.00	9.83	C
ATOM	3302	CD2	TYR	B	86	78.617	41.371	47.901	1.00	14.46	C
ATOM	3303	CE1	TYR	B	86	77.563	42.063	50.364	1.00	11.41	C
ATOM	3304	CE2	TYR	B	86	77.386	41.979	47.992	1.00	12.89	C
ATOM	3305	CZ	TYR	B	86	76.843	42.320	49.195	1.00	15.90	C
ATOM	3306	OH	TYR	B	86	75.609	42.945	49.266	1.00	15.27	O
ATOM	3307	N	ASN	B	87	80.096	37.198	50.341	1.00	15.20	N
ATOM	3308	CA	ASN	B	87	79.150	36.062	50.062	1.00	11.63	C
ATOM	3309	C	ASN	B	87	78.629	35.510	51.379	1.00	12.79	C
ATOM	3310	O	ASN	B	87	78.400	34.272	51.428	1.00	13.83	O
ATOM	3311	CB	ASN	B	87	79.811	35.016	49.174	1.00	12.57	C
ATOM	3312	CG	ASN	B	87	78.746	34.160	48.458	1.00	10.94	C
ATOM	3313	OD1	ASN	B	87	77.582	34.519	48.394	1.00	13.75	O
ATOM	3314	ND2	ASN	B	87	79.185	33.053	47.881	1.00	16.09	N
ATOM	3315	N	LEU	B	88	78.462	36.316	52.424	1.00	14.04	N
ATOM	3316	CA	LEU	B	88	78.049	35.760	53.714	1.00	15.61	C
ATOM	3317	C	LEU	B	88	76.730	35.027	53.630	1.00	17.12	C
ATOM	3318	O	LEU	B	88	75.794	35.390	52.907	1.00	14.00	O
ATOM	3319	CB	LEU	B	88	77.884	36.944	54.667	1.00	17.52	C
ATOM	3320	CG	LEU	B	88	78.240	36.818	56.140	1.00	27.36	C
ATOM	3321	CD1	LEU	B	88	79.664	36.360	56.359	1.00	18.97	C
ATOM	3322	CD2	LEU	B	88	77.936	38.171	56.773	1.00	25.99	C
ATOM	3323	N	PRO	B	89	76.595	33.928	54.345	1.00	14.93	N
ATOM	3324	CA	PRO	B	89	75.300	33.272	54.481	1.00	15.30	C
ATOM	3325	C	PRO	B	89	74.319	34.269	55.084	1.00	18.82	C
ATOM	3326	O	PRO	B	89	74.671	35.073	55.971	1.00	17.39	O
ATOM	3327	CB	PRO	B	89	75.454	32.089	55.441	1.00	18.75	C
ATOM	3328	CG	PRO	B	89	76.911	32.127	55.775	1.00	22.27	C
ATOM	3329	CD	PRO	B	89	77.598	33.384	55.270	1.00	17.79	C
ATOM	3330	N	ASP	B	90	73.075	34.337	54.620	1.00	14.45	N
ATOM	3331	CA	ASP	B	90	72.078	35.307	55.049	1.00	13.10	C
ATOM	3332	C	ASP	B	90	72.598	36.756	54.898	1.00	17.12	C
ATOM	3333	O	ASP	B	90	72.337	37.603	55.727	1.00	14.68	O
ATOM	3334	CB	ASP	B	90	71.627	35.011	56.490	1.00	15.34	C
ATOM	3335	CG	ASP	B	90	70.821	33.718	56.516	1.00	16.30	C
ATOM	3336	OD1	ASP	B	90	70.637	33.052	55.464	1.00	17.37	O
ATOM	3337	OD2	ASP	B	90	70.315	33.377	57.608	1.00	16.22	O
ATOM	3338	N	ARG	B	91	73.262	36.976	53.766	1.00	15.09	N
ATOM	3339	CA	ARG	B	91	73.846	38.280	53.397	1.00	14.08	C
ATOM	3340	C	ARG	B	91	72.850	39.393	53.402	1.00	13.92	C
ATOM	3341	O	ARG	B	91	71.705	39.187	52.965	1.00	14.74	O
ATOM	3342	CB	ARG	B	91	74.452	38.102	51.977	1.00	11.17	C
ATOM	3343	CG	ARG	B	91	75.513	39.121	51.618	1.00	13.54	C
ATOM	3344	CD	ARG	B	91	76.207	38.741	50.329	1.00	16.43	C
ATOM	3345	NE	ARG	B	91	75.305	39.005	49.180	1.00	11.52	N
ATOM	3346	CZ	ARG	B	91	75.678	38.748	47.931	1.00	12.08	C
ATOM	3347	NH1	ARG	B	91	76.862	38.249	47.617	1.00	12.65	N
ATOM	3348	NH2	ARG	B	91	74.802	39.025	46.956	1.00	13.47	N
ATOM	3349	N	ASP	B	92	73.193	40.557	53.927	1.00	15.59	N

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ATOM   3350  CA  ASP B  92      72.285  41.720  54.001  1.00 13.61           C
ATOM   3351  C   ASP B  92      70.999  41.306  54.686  1.00 17.53           C
ATOM   3352  O   ASP B  92      69.886  41.474  54.202  1.00 14.63           O
ATOM   3353  CB  ASP B  92      71.990  42.294  52.604  1.00 13.48           C
ATOM   3354  CG  ASP B  92      73.246  42.882  51.985  1.00 16.12           C
ATOM   3355  OD1 ASP B  92      73.757  43.901  52.521  1.00 15.18           O
ATOM   3356  OD2 ASP B  92      73.727  42.331  50.969  1.00 15.75           O
ATOM   3357  N   CYS B  93      71.155  40.868  55.957  1.00 17.61           N
ATOM   3358  CA  CYS B  93      70.009  40.272  56.632  1.00 20.60           C
ATOM   3359  C   CYS B  93      68.842  41.222  56.804  1.00 16.80           C
ATOM   3360  O   CYS B  93      67.718  40.751  57.022  1.00 20.22           O
ATOM   3361  CB  CYS B  93      70.440  39.580  57.940  1.00 15.36           C
ATOM   3362  SG  CYS B  93      71.096  40.824  59.138  1.00 15.95           S
ATOM   3363  N   SER B  94      69.052  42.527  56.734  1.00 19.34           N
ATOM   3364  CA  SER B  94      68.034  43.538  56.905  1.00 24.34           C
ATOM   3365  C   SER B  94      66.845  43.260  55.976  1.00 25.94           C
ATOM   3366  O   SER B  94      65.712  43.477  56.391  1.00 31.09           O
ATOM   3367  CB  SER B  94      68.601  44.929  56.610  1.00 25.66           C
ATOM   3368  OG  SER B  94      69.396  44.897  55.419  1.00 28.46           O
ATOM   3369  N   ALA B  95      67.134  42.748  54.757  1.00 23.27           N
ATOM   3370  CA  ALA B  95      66.043  42.455  53.839  1.00 23.45           C
ATOM   3371  C   ALA B  95      65.176  41.268  54.217  1.00 25.46           C
ATOM   3372  O   ALA B  95      64.118  41.102  53.585  1.00 29.31           O
ATOM   3373  CB  ALA B  95      66.601  42.230  52.433  1.00 28.35           C
ATOM   3374  N   GLY B  96      65.558  40.404  55.153  1.00 18.90           N
ATOM   3375  CA  GLY B  96      64.738  39.292  55.575  1.00 16.51           C
ATOM   3376  C   GLY B  96      65.130  37.951  54.950  1.00 21.15           C
ATOM   3377  O   GLY B  96      64.644  36.899  55.360  1.00 20.60           O
ATOM   3378  N   GLU B  97      66.086  37.958  54.003  1.00 16.87           N
ATOM   3379  CA  GLU B  97      66.480  36.715  53.347  1.00 16.60           C
ATOM   3380  C   GLU B  97      67.843  36.965  52.702  1.00 15.32           C
ATOM   3381  O   GLU B  97      68.070  38.157  52.454  1.00 13.74           O
ATOM   3382  CB  GLU B  97      65.475  36.336  52.237  1.00 19.41           C
ATOM   3383  CG  GLU B  97      65.767  35.072  51.479  1.00 20.53           C
ATOM   3384  CD  GLU B  97      64.839  34.821  50.290  1.00 21.51           C
ATOM   3385  OE1 GLU B  97      63.895  35.597  50.119  1.00 20.50           O
ATOM   3386  OE2 GLU B  97      65.046  33.804  49.589  1.00 26.57           O
ATOM   3387  N   SER B  98      68.710  35.979  52.574  1.00 16.47           N
ATOM   3388  CA  SER B  98      70.010  36.336  52.010  1.00 16.57           C
ATOM   3389  C   SER B  98      69.889  37.053  50.670  1.00 15.71           C
ATOM   3390  O   SER B  98      69.141  36.612  49.797  1.00 19.00           O
ATOM   3391  CB  SER B  98      70.801  35.041  51.768  1.00 14.64           C
ATOM   3392  OG  SER B  98      72.123  35.331  51.379  1.00 13.12           O
ATOM   3393  N   SER B  99      70.707  38.063  50.493  1.00 16.31           N
ATOM   3394  CA  SER B  99      70.822  38.773  49.214  1.00 15.12           C
ATOM   3395  C   SER B  99      71.707  37.998  48.234  1.00 15.31           C
ATOM   3396  O   SER B  99      71.769  38.379  47.076  1.00 16.33           O
ATOM   3397  CB  SER B  99      71.417  40.163  49.396  1.00 16.49           C
ATOM   3398  OG  SER B  99      72.754  40.162  49.876  1.00 15.92           O
ATOM   3399  N   GLY B 100      72.381  36.966  48.679  1.00 15.73           N
ATOM   3400  CA  GLY B 100      73.262  36.129  47.906  1.00 13.03           C
ATOM   3401  C   GLY B 100      72.799  34.671  47.892  1.00 13.87           C
ATOM   3402  O   GLY B 100      71.698  34.327  48.386  1.00 15.71           O
ATOM   3403  N   GLU B 101      73.652  33.811  47.359  1.00 11.69           N
ATOM   3404  CA  GLU B 101      73.278  32.415  47.187  1.00 15.02           C
ATOM   3405  C   GLU B 101      73.360  31.535  48.421  1.00 18.59           C
ATOM   3406  O   GLU B 101      72.787  30.421  48.383  1.00 16.26           O
ATOM   3407  CB  GLU B 101      74.214  31.817  46.127  1.00 13.93           C
ATOM   3408  CG  GLU B 101      75.670  31.717  46.493  1.00 13.37           C
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ATOM   3409  CD  GLU B 101      76.649  31.626  45.365  1.00 16.54           C
ATOM   3410  OE1 GLU B 101      76.271  31.479  44.184  1.00 17.14           O
ATOM   3411  OE2 GLU B 101      77.854  31.744  45.716  1.00 15.54           O
ATOM   3412  N   LEU B 102      74.055  31.928  49.470  1.00 16.38           N
ATOM   3413  CA  LEU B 102      74.171  31.114  50.681  1.00 15.29           C
ATOM   3414  C   LEU B 102      73.216  31.505  51.785  1.00 14.96           C
ATOM   3415  O   LEU B 102      72.915  32.670  52.036  1.00 14.26           O
ATOM   3416  CB  LEU B 102      75.611  31.184  51.209  1.00 14.48           C
ATOM   3417  CG  LEU B 102      76.703  30.761  50.220  1.00 17.33           C
ATOM   3418  CD1 LEU B 102      78.042  30.799  50.932  1.00 15.63           C
ATOM   3419  CD2 LEU B 102      76.414  29.358  49.699  1.00 16.22           C
ATOM   3420  N   LYS B 103      72.627  30.482  52.427  1.00 16.41           N
ATOM   3421  CA  LYS B 103      71.656  30.716  53.489  1.00 16.99           C
ATOM   3422  C   LYS B 103      72.058  29.882  54.711  1.00 15.52           C
ATOM   3423  O   LYS B 103      72.422  28.704  54.548  1.00 17.11           O
ATOM   3424  CB  LYS B 103      70.220  30.301  53.103  1.00 18.12           C
ATOM   3425  CG  LYS B 103      69.770  30.941  51.788  1.00 13.55           C
ATOM   3426  CD  LYS B 103      68.263  30.726  51.558  1.00 20.50           C
ATOM   3427  CE  LYS B 103      67.928  31.352  50.210  1.00 20.50           C
ATOM   3428  NZ  LYS B 103      66.456  31.179  49.879  1.00 20.97           N
ATOM   3429  N   LEU B 104      71.895  30.436  55.912  1.00 15.54           N
ATOM   3430  CA  LEU B 104      72.323  29.640  57.085  1.00 18.37           C
ATOM   3431  C   LEU B 104      71.534  28.333  57.226  1.00 17.70           C
ATOM   3432  O   LEU B 104      72.153  27.292  57.539  1.00 21.48           O
ATOM   3433  CB  LEU B 104      72.237  30.470  58.361  1.00 19.22           C
ATOM   3434  CG  LEU B 104      73.351  31.511  58.460  1.00 18.43           C
ATOM   3435  CD1 LEU B 104      73.039  32.540  59.546  1.00 16.79           C
ATOM   3436  CD2 LEU B 104      74.707  30.896  58.759  1.00 20.30           C
ATOM   3437  N   SER B 105      70.262  28.420  56.853  1.00 15.63           N
ATOM   3438  CA  SER B 105      69.424  27.197  56.887  1.00 22.72           C
ATOM   3439  C   SER B 105      69.716  26.184  55.801  1.00 25.35           C
ATOM   3440  O   SER B 105      69.107  25.090  55.816  1.00 25.55           O
ATOM   3441  CB  SER B 105      67.940  27.580  56.798  1.00 25.19           C
ATOM   3442  OG  SER B 105      67.655  28.248  55.590  1.00 22.90           O
ATOM   3443  N   GLN B 106      70.579  26.437  54.838  1.00 24.54           N
ATOM   3444  CA  GLN B 106      71.020  25.557  53.787  1.00 19.81           C
ATOM   3445  C   GLN B 106      72.513  25.283  53.898  1.00 17.26           C
ATOM   3446  O   GLN B 106      73.328  25.300  52.971  1.00 19.40           O
ATOM   3447  CB  GLN B 106      70.674  26.095  52.384  1.00 24.04           C
ATOM   3448  CG  GLN B 106      69.197  26.406  52.243  1.00 27.32           C
ATOM   3449  CD  GLN B 106      68.780  26.862  50.863  1.00 25.24           C
ATOM   3450  OE1 GLN B 106      69.575  27.265  50.002  1.00 27.75           O
ATOM   3451  NE2 GLN B 106      67.474  26.821  50.626  1.00 32.87           N
ATOM   3452  N   ASN B 107      72.935  24.976  55.142  1.00 17.62           N
ATOM   3453  CA  ASN B 107      74.327  24.653  55.431  1.00 16.37           C
ATOM   3454  C   ASN B 107      75.287  25.772  54.989  1.00 17.04           C
ATOM   3455  O   ASN B 107      76.401  25.529  54.569  1.00 18.76           O
ATOM   3456  CB  ASN B 107      74.759  23.358  54.721  1.00 18.52           C
ATOM   3457  CG  ASN B 107      76.035  22.716  55.196  1.00 14.62           C
ATOM   3458  OD1 ASN B 107      76.850  22.091  54.472  1.00 23.47           O
ATOM   3459  ND2 ASN B 107      76.342  22.805  56.481  1.00 16.64           N
ATOM   3460  N   GLY B 108      74.789  27.008  55.135  1.00 20.03           N
ATOM   3461  CA  GLY B 108      75.529  28.138  54.573  1.00 15.91           C
ATOM   3462  C   GLY B 108      76.853  28.453  55.201  1.00 15.34           C
ATOM   3463  O   GLY B 108      77.800  28.841  54.531  1.00 14.99           O
ATOM   3464  N   LEU B 109      76.918  28.350  56.548  1.00 17.11           N
ATOM   3465  CA  LEU B 109      78.238  28.582  57.170  1.00 16.63           C
ATOM   3466  C   LEU B 109      79.308  27.666  56.601  1.00 16.78           C
ATOM   3467  O   LEU B 109      80.394  28.102  56.264  1.00 17.74           O
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ATOM	3468	CB	LEU	B	109	78.045	28.403	58.674	1.00	16.02	C
ATOM	3469	CG	LEU	B	109	79.285	28.695	59.550	1.00	18.11	C
ATOM	3470	CD1	LEU	B	109	79.918	30.037	59.214	1.00	21.27	C
ATOM	3471	CD2	LEU	B	109	78.825	28.695	61.011	1.00	21.87	C
ATOM	3472	N	ASN	B	110	79.082	26.340	56.525	1.00	18.97	N
ATOM	3473	CA	ASN	B	110	80.055	25.430	55.940	1.00	19.83	C
ATOM	3474	C	ASN	B	110	80.390	25.650	54.475	1.00	13.49	C
ATOM	3475	O	ASN	B	110	81.532	25.583	54.036	1.00	17.00	O
ATOM	3476	CB	ASN	B	110	79.560	23.960	56.072	1.00	26.50	C
ATOM	3477	CG	ASN	B	110	79.843	23.395	57.451	1.00	25.67	C
ATOM	3478	OD1	ASN	B	110	79.055	22.559	57.915	1.00	31.15	O
ATOM	3479	ND2	ASN	B	110	80.911	23.824	58.102	1.00	22.53	N
ATOM	3480	N	ARG	B	111	79.372	25.929	53.639	1.00	15.53	N
ATOM	3481	CA	ARG	B	111	79.602	26.241	52.240	1.00	18.42	C
ATOM	3482	C	ARG	B	111	80.426	27.536	52.103	1.00	12.97	C
ATOM	3483	O	ARG	B	111	81.265	27.589	51.220	1.00	16.22	O
ATOM	3484	CB	ARG	B	111	78.251	26.371	51.550	1.00	19.94	C
ATOM	3485	CG	ARG	B	111	77.526	25.045	51.335	1.00	23.93	C
ATOM	3486	CD	ARG	B	111	76.123	25.319	50.813	1.00	27.24	C
ATOM	3487	NE	ARG	B	111	75.432	24.095	50.438	1.00	29.18	N
ATOM	3488	CZ	ARG	B	111	74.175	23.977	50.018	1.00	32.12	C
ATOM	3489	NH1	ARG	B	111	73.334	24.981	49.893	1.00	27.86	N
ATOM	3490	NH2	ARG	B	111	73.780	22.735	49.720	1.00	33.98	N
ATOM	3491	N	TYR	B	112	80.153	28.503	52.975	1.00	15.72	N
ATOM	3492	CA	TYR	B	112	80.949	29.738	52.898	1.00	16.36	C
ATOM	3493	C	TYR	B	112	82.409	29.452	53.196	1.00	16.66	C
ATOM	3494	O	TYR	B	112	83.279	29.873	52.454	1.00	18.17	O
ATOM	3495	CB	TYR	B	112	80.415	30.736	53.894	1.00	16.37	C
ATOM	3496	CG	TYR	B	112	81.101	32.070	54.017	1.00	16.65	C
ATOM	3497	CD1	TYR	B	112	80.811	33.066	53.073	1.00	17.33	C
ATOM	3498	CD2	TYR	B	112	81.969	32.347	55.060	1.00	16.53	C
ATOM	3499	CE1	TYR	B	112	81.437	34.303	53.196	1.00	16.50	C
ATOM	3500	CE2	TYR	B	112	82.545	33.611	55.203	1.00	18.00	C
ATOM	3501	CZ	TYR	B	112	82.271	34.561	54.254	1.00	18.48	C
ATOM	3502	OH	TYR	B	112	82.827	35.831	54.359	1.00	13.95	O
ATOM	3503	N	LYS	B	113	82.660	28.682	54.275	1.00	16.58	N
ATOM	3504	CA	LYS	B	113	84.061	28.386	54.579	1.00	18.32	C
ATOM	3505	C	LYS	B	113	84.761	27.596	53.510	1.00	15.29	C
ATOM	3506	O	LYS	B	113	85.855	27.869	53.070	1.00	18.38	O
ATOM	3507	CB	LYS	B	113	84.087	27.503	55.841	1.00	17.98	C
ATOM	3508	CG	LYS	B	113	83.505	28.228	57.029	1.00	18.74	C
ATOM	3509	CD	LYS	B	113	84.011	27.468	58.263	1.00	24.57	C
ATOM	3510	CE	LYS	B	113	83.412	28.071	59.510	1.00	24.59	C
ATOM	3511	NZ	LYS	B	113	83.538	27.158	60.701	1.00	24.23	N
ATOM	3512	N	ASN	B	114	84.093	26.469	53.123	1.00	21.04	N
ATOM	3513	CA	ASN	B	114	84.713	25.516	52.225	1.00	18.95	C
ATOM	3514	C	ASN	B	114	84.566	25.712	50.741	1.00	17.06	C
ATOM	3515	O	ASN	B	114	85.498	25.342	50.030	1.00	21.17	O
ATOM	3516	CB	ASN	B	114	84.244	24.088	52.611	1.00	21.37	C
ATOM	3517	CG	ASN	B	114	84.538	23.806	54.073	1.00	21.77	C
ATOM	3518	OD1	ASN	B	114	85.591	24.130	54.628	1.00	28.59	O
ATOM	3519	ND2	ASN	B	114	83.629	23.146	54.778	1.00	22.63	N
ATOM	3520	N	GLU	B	115	83.477	26.315	50.275	1.00	17.20	N
ATOM	3521	CA	GLU	B	115	83.314	26.474	48.828	1.00	15.43	C
ATOM	3522	C	GLU	B	115	83.543	27.947	48.422	1.00	17.69	C
ATOM	3523	O	GLU	B	115	83.680	28.188	47.207	1.00	17.94	O
ATOM	3524	CB	GLU	B	115	81.894	26.107	48.362	1.00	20.26	C
ATOM	3525	CG	GLU	B	115	81.545	24.640	48.624	1.00	27.90	C
ATOM	3526	CD	GLU	B	115	80.211	24.311	47.945	1.00	29.81	C

ATOM	3527	OE1	GLU	B	115	79.997	24.659	46.763	1.00	35.00	O
ATOM	3528	OE2	GLU	B	115	79.370	23.736	48.635	1.00	29.84	O
ATOM	3529	N	TYR	B	116	83.681	28.819	49.414	1.00	19.55	N
ATOM	3530	CA	TYR	B	116	83.927	30.230	49.082	1.00	15.79	C
ATOM	3531	C	TYR	B	116	85.250	30.766	49.639	1.00	13.17	C
ATOM	3532	O	TYR	B	116	86.134	31.063	48.848	1.00	17.40	O
ATOM	3533	CB	TYR	B	116	82.688	31.068	49.466	1.00	16.80	C
ATOM	3534	CG	TYR	B	116	82.895	32.545	49.114	1.00	16.19	C
ATOM	3535	CD1	TYR	B	116	82.924	32.938	47.783	1.00	15.08	C
ATOM	3536	CD2	TYR	B	116	83.175	33.478	50.093	1.00	16.80	C
ATOM	3537	CE1	TYR	B	116	83.132	34.267	47.441	1.00	14.73	C
ATOM	3538	CE2	TYR	B	116	83.425	34.808	49.764	1.00	18.20	C
ATOM	3539	CZ	TYR	B	116	83.400	35.174	48.437	1.00	17.15	C
ATOM	3540	OH	TYR	B	116	83.675	36.484	48.037	1.00	16.59	O
ATOM	3541	N	VAL	B	117	85.406	30.857	50.938	1.00	16.29	N
ATOM	3542	CA	VAL	B	117	86.616	31.394	51.565	1.00	14.14	C
ATOM	3543	C	VAL	B	117	87.840	30.546	51.232	1.00	15.15	C
ATOM	3544	O	VAL	B	117	88.869	31.118	50.868	1.00	16.72	O
ATOM	3545	CB	VAL	B	117	86.448	31.519	53.090	1.00	16.96	C
ATOM	3546	CG1	VAL	B	117	87.758	31.948	53.772	1.00	18.85	C
ATOM	3547	CG2	VAL	B	117	85.366	32.462	53.592	1.00	17.76	C
ATOM	3548	N	ASN	B	118	87.766	29.212	51.346	1.00	18.58	N
ATOM	3549	CA	ASN	B	118	88.986	28.435	51.072	1.00	18.85	C
ATOM	3550	C	ASN	B	118	89.617	28.655	49.741	1.00	18.78	C
ATOM	3551	O	ASN	B	118	90.782	28.997	49.557	1.00	20.41	O
ATOM	3552	CB	ASN	B	118	88.753	26.969	51.441	1.00	19.32	C
ATOM	3553	CG	ASN	B	118	88.628	26.758	52.933	1.00	24.69	C
ATOM	3554	OD1	ASN	B	118	88.870	27.594	53.815	1.00	22.08	O
ATOM	3555	ND2	ASN	B	118	88.207	25.539	53.310	1.00	31.80	N
ATOM	3556	N	PRO	B	119	88.865	28.536	48.630	1.00	16.00	N
ATOM	3557	CA	PRO	B	119	89.376	28.772	47.297	1.00	18.36	C
ATOM	3558	C	PRO	B	119	89.812	30.217	47.102	1.00	18.46	C
ATOM	3559	O	PRO	B	119	90.734	30.476	46.322	1.00	18.94	O
ATOM	3560	CB	PRO	B	119	88.274	28.372	46.302	1.00	23.95	C
ATOM	3561	CG	PRO	B	119	87.122	28.036	47.199	1.00	23.80	C
ATOM	3562	CD	PRO	B	119	87.514	27.982	48.655	1.00	21.92	C
ATOM	3563	N	PHE	B	120	89.090	31.142	47.763	1.00	17.52	N
ATOM	3564	CA	PHE	B	120	89.500	32.560	47.596	1.00	19.31	C
ATOM	3565	C	PHE	B	120	90.922	32.719	48.172	1.00	14.13	C
ATOM	3566	O	PHE	B	120	91.774	33.239	47.481	1.00	17.68	O
ATOM	3567	CB	PHE	B	120	88.489	33.405	48.344	1.00	16.45	C
ATOM	3568	CG	PHE	B	120	88.475	34.899	48.228	1.00	18.75	C
ATOM	3569	CD1	PHE	B	120	89.595	35.656	48.551	1.00	18.72	C
ATOM	3570	CD2	PHE	B	120	87.313	35.550	47.837	1.00	18.58	C
ATOM	3571	CE1	PHE	B	120	89.557	37.045	48.449	1.00	16.89	C
ATOM	3572	CE2	PHE	B	120	87.239	36.921	47.758	1.00	15.08	C
ATOM	3573	CZ	PHE	B	120	88.373	37.668	48.061	1.00	15.36	C
ATOM	3574	N	ALA	B	121	91.044	32.220	49.402	1.00	20.28	N
ATOM	3575	CA	ALA	B	121	92.355	32.303	50.080	1.00	19.92	C
ATOM	3576	C	ALA	B	121	93.427	31.557	49.323	1.00	22.39	C
ATOM	3577	O	ALA	B	121	94.543	32.096	49.181	1.00	26.17	O
ATOM	3578	CB	ALA	B	121	92.204	31.902	51.546	1.00	22.68	C
ATOM	3579	N	GLN	B	122	93.173	30.403	48.696	1.00	24.30	N
ATOM	3580	CA	GLN	B	122	94.147	29.651	47.925	1.00	24.97	C
ATOM	3581	C	GLN	B	122	94.710	30.392	46.725	1.00	29.12	C
ATOM	3582	O	GLN	B	122	95.905	30.396	46.404	1.00	23.53	O
ATOM	3583	CB	GLN	B	122	93.567	28.295	47.507	1.00	28.16	C
ATOM	3584	CG	GLN	B	122	93.999	27.719	46.174	1.00	38.86	C
ATOM	3585	CD	GLN	B	122	93.454	26.315	45.965	1.00	49.47	C

ATOM	3586	OE1	GLN	B	122	92.636	25.826	46.757	1.00	48.11		O
ATOM	3587	NE2	GLN	B	122	93.897	25.646	44.905	1.00	54.45		N
ATOM	3588	N	LYS	B	123	93.835	31.057	45.965	1.00	20.97		N
ATOM	3589	CA	LYS	B	123	94.256	31.820	44.798	1.00	21.89		C
ATOM	3590	C	LYS	B	123	95.123	32.995	45.256	1.00	21.71		C
ATOM	3591	O	LYS	B	123	96.093	33.238	44.551	1.00	27.66		O
ATOM	3592	CB	LYS	B	123	92.980	32.282	44.105	1.00	20.46		C
ATOM	3593	CG	LYS	B	123	92.157	31.220	43.405	1.00	24.83		C
ATOM	3594	CD	LYS	B	123	90.883	31.875	42.836	1.00	20.09		C
ATOM	3595	CE	LYS	B	123	89.917	30.771	42.393	1.00	22.82		C
ATOM	3596	NZ	LYS	B	123	90.440	30.048	41.189	1.00	24.93		N
ATOM	3597	N	LEU	B	124	94.801	33.647	46.357	1.00	24.17		N
ATOM	3598	CA	LEU	B	124	95.595	34.801	46.816	1.00	21.76		C
ATOM	3599	C	LEU	B	124	96.966	34.322	47.296	1.00	23.77		C
ATOM	3600	O	LEU	B	124	97.984	34.931	46.910	1.00	28.41		O
ATOM	3601	CB	LEU	B	124	94.865	35.593	47.906	1.00	24.20		C
ATOM	3602	CG	LEU	B	124	94.030	36.776	47.367	1.00	24.16		C
ATOM	3603	CD1	LEU	B	124	92.891	36.270	46.469	1.00	19.80		C
ATOM	3604	CD2	LEU	B	124	93.476	37.582	48.531	1.00	23.53		C
ATOM	3605	N	LYS	B	125	97.011	33.151	47.910	1.00	25.42		N
ATOM	3606	CA	LYS	B	125	98.294	32.590	48.376	1.00	26.58		C
ATOM	3607	C	LYS	B	125	99.199	32.158	47.259	1.00	30.33		C
ATOM	3608	O	LYS	B	125	100.412	32.491	47.235	1.00	33.95		O
ATOM	3609	CB	LYS	B	125	97.976	31.495	49.407	1.00	31.01		C
ATOM	3610	CG	LYS	B	125	97.495	32.128	50.703	1.00	21.58		C
ATOM	3611	CD	LYS	B	125	96.749	31.229	51.629	1.00	31.88		C
ATOM	3612	CE	LYS	B	125	96.490	31.809	53.011	1.00	20.97		C
ATOM	3613	NZ	LYS	B	125	95.641	30.823	53.749	1.00	29.14		N
ATOM	3614	N	ALA	B	126	98.709	31.551	46.182	1.00	27.52		N
ATOM	3615	CA	ALA	B	126	99.534	31.183	45.026	1.00	23.70		C
ATOM	3616	C	ALA	B	126	100.120	32.404	44.329	1.00	28.30		C
ATOM	3617	O	ALA	B	126	101.157	32.390	43.659	1.00	28.11		O
ATOM	3618	CB	ALA	B	126	98.757	30.328	44.041	1.00	31.19		C
ATOM	3619	N	ALA	B	127	99.450	33.540	44.486	1.00	29.13		N
ATOM	3620	CA	ALA	B	127	99.802	34.835	43.955	1.00	31.16		C
ATOM	3621	C	ALA	B	127	100.578	35.654	44.977	1.00	34.21		C
ATOM	3622	O	ALA	B	127	100.174	36.709	45.476	1.00	29.41		O
ATOM	3623	CB	ALA	B	127	98.495	35.543	43.595	1.00	28.04		C
ATOM	3624	N	SER	B	128	101.786	35.180	45.298	1.00	32.43		N
ATOM	3625	CA	SER	B	128	102.660	35.800	46.271	1.00	32.25		C
ATOM	3626	C	SER	B	128	103.319	37.073	45.750	1.00	24.54		C
ATOM	3627	O	SER	B	128	103.683	37.927	46.552	1.00	33.73		O
ATOM	3628	CB	SER	B	128	103.762	34.818	46.706	1.00	37.87		C
ATOM	3629	OG	SER	B	128	104.163	33.963	45.661	1.00	39.24		O
ATOM	3630	N	ASP	B	129	103.460	37.197	44.455	1.00	31.97		N
ATOM	3631	CA	ASP	B	129	104.009	38.308	43.721	1.00	29.79		C
ATOM	3632	C	ASP	B	129	103.026	39.481	43.644	1.00	32.25		C
ATOM	3633	O	ASP	B	129	103.376	40.560	43.141	1.00	34.17		O
ATOM	3634	CB	ASP	B	129	104.320	37.840	42.292	1.00	33.19		C
ATOM	3635	CG	ASP	B	129	103.185	37.218	41.511	1.00	25.83		C
ATOM	3636	OD1	ASP	B	129	102.435	36.421	42.110	1.00	36.80		O
ATOM	3637	OD2	ASP	B	129	103.035	37.497	40.296	1.00	37.23		O
ATOM	3638	N	VAL	B	130	101.776	39.231	44.051	1.00	29.46		N
ATOM	3639	CA	VAL	B	130	100.738	40.263	43.980	1.00	27.44		C
ATOM	3640	C	VAL	B	130	100.293	40.772	45.328	1.00	24.03		C
ATOM	3641	O	VAL	B	130	100.064	40.117	46.353	1.00	25.62		O
ATOM	3642	CB	VAL	B	130	99.506	39.748	43.191	1.00	26.99		C
ATOM	3643	CG1	VAL	B	130	98.401	40.809	43.180	1.00	26.96		C
ATOM	3644	CG2	VAL	B	130	99.835	39.387	41.758	1.00	22.05		C

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ATOM   3645  N   GLN B 131     100.121  42.129  45.350  1.00 22.96           N
ATOM   3646  CA  GLN B 131      99.636  42.783  46.551  1.00 19.81           C
ATOM   3647  C   GLN B 131      98.094  42.915  46.465  1.00 20.68           C
ATOM   3648  O   GLN B 131      97.674  43.446  45.445  1.00 21.77           O
ATOM   3649  CB  GLN B 131     100.117  44.242  46.677  1.00 22.81           C
ATOM   3650  CG  GLN B 131     101.640  44.255  46.912  1.00 29.87           C
ATOM   3651  CD  GLN B 131     102.033  43.500  48.158  1.00 24.86           C
ATOM   3652  OE1 GLN B 131     101.618  43.807  49.273  1.00 29.69           O
ATOM   3653  NE2 GLN B 131     102.876  42.482  47.939  1.00 32.63           N
ATOM   3654  N   PHE B 132      97.470  42.488  47.537  1.00 22.94           N
ATOM   3655  CA  PHE B 132      96.000  42.517  47.546  1.00 26.91           C
ATOM   3656  C   PHE B 132      95.452  43.357  48.671  1.00 21.14           C
ATOM   3657  O   PHE B 132      95.838  43.264  49.848  1.00 20.79           O
ATOM   3658  CB  PHE B 132      95.431  41.088  47.798  1.00 20.65           C
ATOM   3659  CG  PHE B 132      95.700  40.115  46.695  1.00 22.40           C
ATOM   3660  CD1 PHE B 132      94.934  40.079  45.556  1.00 19.64           C
ATOM   3661  CD2 PHE B 132      96.746  39.195  46.807  1.00 17.32           C
ATOM   3662  CE1 PHE B 132      95.143  39.205  44.510  1.00 24.57           C
ATOM   3663  CE2 PHE B 132      96.985  38.348  45.750  1.00 20.68           C
ATOM   3664  CZ  PHE B 132      96.213  38.312  44.619  1.00 26.31           C
ATOM   3665  N   ALA B 133      94.401  44.159  48.370  1.00 16.96           N
ATOM   3666  CA  ALA B 133      93.639  44.809  49.395  1.00 16.49           C
ATOM   3667  C   ALA B 133      92.235  44.136  49.389  1.00 18.38           C
ATOM   3668  O   ALA B 133      91.665  44.209  48.323  1.00 17.13           O
ATOM   3669  CB  ALA B 133      93.387  46.292  49.193  1.00 14.60           C
ATOM   3670  N   VAL B 134      91.895  43.491  50.475  1.00 18.42           N
ATOM   3671  CA  VAL B 134      90.606  42.760  50.517  1.00 15.66           C
ATOM   3672  C   VAL B 134      89.659  43.423  51.467  1.00 14.54           C
ATOM   3673  O   VAL B 134      89.874  43.572  52.675  1.00 14.16           O
ATOM   3674  CB  VAL B 134      90.900  41.306  50.918  1.00 13.72           C
ATOM   3675  CG1 VAL B 134      89.589  40.495  50.974  1.00 17.54           C
ATOM   3676  CG2 VAL B 134      91.842  40.596  49.957  1.00 19.02           C
ATOM   3677  N   ILE B 135      88.502  43.872  50.951  1.00 13.30           N
ATOM   3678  CA  ILE B 135      87.422  44.400  51.774  1.00 14.75           C
ATOM   3679  C   ILE B 135      86.485  43.235  52.160  1.00 14.96           C
ATOM   3680  O   ILE B 135      86.101  42.470  51.285  1.00 15.76           O
ATOM   3681  CB  ILE B 135      86.667  45.528  51.047  1.00 11.61           C
ATOM   3682  CG1 ILE B 135      87.543  46.792  51.091  1.00 14.70           C
ATOM   3683  CG2 ILE B 135      85.287  45.746  51.620  1.00 13.63           C
ATOM   3684  CD1 ILE B 135      86.940  47.902  50.221  1.00 16.11           C
ATOM   3685  N   LEU B 136      86.357  43.089  53.449  1.00 13.52           N
ATOM   3686  CA  LEU B 136      85.589  41.989  54.021  1.00 15.53           C
ATOM   3687  C   LEU B 136      84.171  42.363  54.349  1.00 13.72           C
ATOM   3688  O   LEU B 136      83.800  43.154  55.212  1.00 15.39           O
ATOM   3689  CB  LEU B 136      86.291  41.489  55.298  1.00 13.79           C
ATOM   3690  CG  LEU B 136      87.737  41.035  55.172  1.00 18.13           C
ATOM   3691  CD1 LEU B 136      88.333  40.902  56.570  1.00 23.01           C
ATOM   3692  CD2 LEU B 136      87.832  39.733  54.380  1.00 19.02           C
ATOM   3693  N   GLU B 137      83.252  41.681  53.633  1.00 13.75           N
ATOM   3694  CA  GLU B 137      81.840  41.685  53.812  1.00 13.00           C
ATOM   3695  C   GLU B 137      81.161  43.006  54.106  1.00 11.93           C
ATOM   3696  O   GLU B 137      80.680  43.291  55.204  1.00 13.48           O
ATOM   3697  CB  GLU B 137      81.481  40.595  54.861  1.00 16.46           C
ATOM   3698  CG  GLU B 137      81.909  39.210  54.399  1.00 17.10           C
ATOM   3699  CD  GLU B 137      81.006  38.627  53.309  1.00 12.29           C
ATOM   3700  OE1 GLU B 137      79.988  39.251  52.933  1.00 11.47           O
ATOM   3701  OE2 GLU B 137      81.388  37.542  52.856  1.00 13.64           O
ATOM   3702  N   PRO B 138      80.949  43.765  53.021  1.00  9.65           N
ATOM   3703  CA  PRO B 138      80.283  45.064  53.165  1.00 11.66           C
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	ATOM	3704	C	PRO	B	138	78.950	44.922	53.848	1.00 16.41	C
	ATOM	3705	O	PRO	B	138	78.139	43.988	53.674	1.00 14.38	O
	ATOM	3706	CB	PRO	B	138	80.041	45.531	51.710	1.00 14.17	C
	ATOM	3707	CG	PRO	B	138	81.226	44.915	51.017	1.00 14.54	C
5	ATOM	3708	CD	PRO	B	138	81.479	43.552	51.696	1.00 15.40	C
	ATOM	3709	N	ASP	B	139	78.715	45.822	54.776	1.00 12.09	N
	ATOM	3710	CA	ASP	B	139	77.649	46.085	55.646	1.00 11.26	C
	ATOM	3711	C	ASP	B	139	77.235	44.998	56.635	1.00 13.19	C
	ATOM	3712	O	ASP	B	139	76.240	45.146	57.330	1.00 13.01	O
10	ATOM	3713	CB	ASP	B	139	76.407	46.427	54.798	1.00 17.62	C
	ATOM	3714	CG	ASP	B	139	76.503	47.802	54.204	1.00 14.56	C
	ATOM	3715	OD1	ASP	B	139	77.318	48.629	54.675	1.00 15.57	O
	ATOM	3716	OD2	ASP	B	139	75.746	48.063	53.230	1.00 15.76	O
	ATOM	3717	N	ALA	B	140	78.031	43.911	56.724	1.00 12.47	N
15	ATOM	3718	CA	ALA	B	140	77.659	42.855	57.667	1.00 10.82	C
	ATOM	3719	C	ALA	B	140	77.712	43.418	59.088	1.00 14.07	C
	ATOM	3720	O	ALA	B	140	76.781	43.169	59.838	1.00 16.04	O
	ATOM	3721	CB	ALA	B	140	78.585	41.661	57.526	1.00 11.51	C
	ATOM	3722	N	ILE	B	141	78.782	44.156	59.401	1.00 14.29	N
20	ATOM	3723	CA	ILE	B	141	78.873	44.726	60.760	1.00 15.41	C
	ATOM	3724	C	ILE	B	141	77.744	45.675	61.073	1.00 17.38	C
	ATOM	3725	O	ILE	B	141	77.192	45.707	62.164	1.00 17.24	O
	ATOM	3726	CB	ILE	B	141	80.265	45.340	61.014	1.00 15.52	C
	ATOM	3727	CG1	ILE	B	141	81.238	44.163	61.224	1.00 16.65	C
25	ATOM	3728	CG2	ILE	B	141	80.260	46.205	62.265	1.00 13.33	C
	ATOM	3729	CD1	ILE	B	141	82.712	44.518	61.367	1.00 17.73	C
	ATOM	3730	N	GLY	B	142	77.318	46.494	60.115	1.00 15.85	N
	ATOM	3731	CA	GLY	B	142	76.202	47.426	60.341	1.00 17.76	C
	ATOM	3732	C	GLY	B	142	74.947	46.627	60.715	1.00 18.26	C
30	ATOM	3733	O	GLY	B	142	74.254	47.011	61.640	1.00 17.59	O
	ATOM	3734	N	ASN	B	143	74.662	45.572	59.958	1.00 15.58	N
	ATOM	3735	CA	ASN	B	143	73.447	44.801	60.289	1.00 18.17	C
	ATOM	3736	C	ASN	B	143	73.555	44.149	61.676	1.00 20.16	C
	ATOM	3737	O	ASN	B	143	72.572	43.925	62.379	1.00 17.81	O
35	ATOM	3738	CB	ASN	B	143	73.251	43.732	59.230	1.00 18.60	C
	ATOM	3739	CG	ASN	B	143	72.637	44.316	57.969	1.00 20.06	C
	ATOM	3740	OD1	ASN	B	143	71.501	44.746	58.042	1.00 21.17	O
	ATOM	3741	ND2	ASN	B	143	73.368	44.350	56.859	1.00 14.95	N
	ATOM	3742	N	MET	B	144	74.774	43.774	62.040	1.00 15.40	N
40	ATOM	3743	CA	MET	B	144	74.950	43.151	63.357	1.00 21.47	C
	ATOM	3744	C	MET	B	144	74.707	44.124	64.496	1.00 27.91	C
	ATOM	3745	O	MET	B	144	74.087	43.756	65.488	1.00 20.91	O
	ATOM	3746	CB	MET	B	144	76.366	42.653	63.517	1.00 19.67	C
	ATOM	3747	CG	MET	B	144	76.579	41.381	62.717	1.00 23.41	C
45	ATOM	3748	SD	MET	B	144	78.362	40.995	62.834	1.00 25.38	S
	ATOM	3749	CE	MET	B	144	78.546	40.493	61.116	1.00 20.83	C
	ATOM	3750	N	VAL	B	145	75.271	45.322	64.360	1.00 25.22	N
	ATOM	3751	CA	VAL	B	145	75.142	46.311	65.417	1.00 25.15	C
	ATOM	3752	C	VAL	B	145	73.738	46.835	65.618	1.00 30.65	C
50	ATOM	3753	O	VAL	B	145	73.289	47.026	66.762	1.00 27.78	O
	ATOM	3754	CB	VAL	B	145	76.128	47.460	65.094	1.00 22.43	C
	ATOM	3755	CG1	VAL	B	145	75.864	48.678	65.958	1.00 22.21	C
	ATOM	3756	CG2	VAL	B	145	77.553	46.962	65.248	1.00 28.65	C
	ATOM	3757	N	THR	B	146	73.028	47.150	64.530	1.00 26.11	N
55	ATOM	3758	CA	THR	B	146	71.720	47.744	64.633	1.00 24.62	C
	ATOM	3759	C	THR	B	146	70.561	46.853	64.238	1.00 21.06	C
	ATOM	3760	O	THR	B	146	69.448	47.260	64.540	1.00 25.27	O
	ATOM	3761	CB	THR	B	146	71.631	49.013	63.729	1.00 31.66	C
	ATOM	3762	OG1	THR	B	146	71.703	48.607	62.352	1.00 23.88	O

ATOM	3763	CG2	THR	B	146	72.758	49.978	64.049	1.00	28.37	C
ATOM	3764	N	GLY	B	147	70.768	45.718	63.583	1.00	20.50	N
ATOM	3765	CA	GLY	B	147	69.651	44.916	63.122	1.00	20.46	C
ATOM	3766	C	GLY	B	147	68.875	44.278	64.273	1.00	18.32	C
ATOM	3767	O	GLY	B	147	69.468	43.540	65.037	1.00	20.95	O
ATOM	3768	N	THR	B	148	67.568	44.479	64.311	1.00	24.13	N
ATOM	3769	CA	THR	B	148	66.775	43.925	65.408	1.00	24.05	C
ATOM	3770	C	THR	B	148	65.763	42.876	64.960	1.00	25.46	C
ATOM	3771	O	THR	B	148	65.031	42.311	65.767	1.00	25.50	O
ATOM	3772	CB	THR	B	148	66.057	45.010	66.231	1.00	25.43	C
ATOM	3773	OG1	THR	B	148	65.214	45.829	65.414	1.00	27.55	O
ATOM	3774	CG2	THR	B	148	67.034	45.917	66.974	1.00	28.06	C
ATOM	3775	N	SER	B	149	65.689	42.559	63.663	1.00	27.18	N
ATOM	3776	CA	SER	B	149	64.722	41.545	63.240	1.00	24.73	C
ATOM	3777	C	SER	B	149	65.216	40.177	63.668	1.00	21.36	C
ATOM	3778	O	SER	B	149	66.397	39.964	63.907	1.00	22.14	O
ATOM	3779	CB	SER	B	149	64.514	41.576	61.723	1.00	27.41	C
ATOM	3780	OG	SER	B	149	65.677	41.056	61.080	1.00	24.60	O
ATOM	3781	N	ALA	B	150	64.301	39.197	63.771	1.00	24.58	N
ATOM	3782	CA	ALA	B	150	64.688	37.849	64.162	1.00	26.91	C
ATOM	3783	C	ALA	B	150	65.694	37.235	63.203	1.00	22.48	C
ATOM	3784	O	ALA	B	150	66.622	36.553	63.595	1.00	22.71	O
ATOM	3785	CB	ALA	B	150	63.428	36.972	64.220	1.00	33.42	C
ATOM	3786	N	PHE	B	151	65.458	37.491	61.898	1.00	23.13	N
ATOM	3787	CA	PHE	B	151	66.368	36.988	60.867	1.00	20.01	C
ATOM	3788	C	PHE	B	151	67.793	37.464	61.091	1.00	14.60	C
ATOM	3789	O	PHE	B	151	68.722	36.671	61.044	1.00	16.97	O
ATOM	3790	CB	PHE	B	151	65.816	37.414	59.493	1.00	19.44	C
ATOM	3791	CG	PHE	B	151	66.510	36.652	58.401	1.00	20.06	C
ATOM	3792	CD1	PHE	B	151	66.301	35.300	58.182	1.00	19.19	C
ATOM	3793	CD2	PHE	B	151	67.463	37.327	57.641	1.00	16.93	C
ATOM	3794	CE1	PHE	B	151	67.009	34.647	57.181	1.00	20.25	C
ATOM	3795	CE2	PHE	B	151	68.138	36.687	56.617	1.00	16.16	C
ATOM	3796	CZ	PHE	B	151	67.927	35.336	56.396	1.00	20.13	C
ATOM	3797	N	CYS	B	152	67.954	38.782	61.329	1.00	16.81	N
ATOM	3798	CA	CYS	B	152	69.288	39.304	61.614	1.00	15.93	C
ATOM	3799	C	CYS	B	152	69.806	38.800	62.967	1.00	18.99	C
ATOM	3800	O	CYS	B	152	71.012	38.520	63.019	1.00	18.93	O
ATOM	3801	CB	CYS	B	152	69.314	40.852	61.640	1.00	19.71	C
ATOM	3802	SG	CYS	B	152	69.415	41.586	59.968	1.00	18.74	S
ATOM	3803	N	ARG	B	153	68.916	38.725	63.955	1.00	23.55	N
ATOM	3804	CA	ARG	B	153	69.333	38.282	65.296	1.00	22.77	C
ATOM	3805	C	ARG	B	153	69.814	36.842	65.255	1.00	23.76	C
ATOM	3806	O	ARG	B	153	70.875	36.517	65.805	1.00	23.55	O
ATOM	3807	CB	ARG	B	153	68.252	38.489	66.361	1.00	20.42	C
ATOM	3808	CG	ARG	B	153	67.967	39.949	66.637	1.00	23.45	C
ATOM	3809	CD	ARG	B	153	67.009	40.140	67.796	1.00	27.75	C
ATOM	3810	NE	ARG	B	153	65.610	40.114	67.348	1.00	24.45	N
ATOM	3811	CZ	ARG	B	153	64.716	39.303	67.928	1.00	31.22	C
ATOM	3812	NH1	ARG	B	153	65.090	38.508	68.917	1.00	26.50	N
ATOM	3813	NH2	ARG	B	153	63.469	39.317	67.506	1.00	34.12	N
ATOM	3814	N	ASN	B	154	69.141	35.998	64.466	1.00	23.30	N
ATOM	3815	CA	ASN	B	154	69.616	34.627	64.260	1.00	23.76	C
ATOM	3816	C	ASN	B	154	70.882	34.451	63.467	1.00	29.27	C
ATOM	3817	O	ASN	B	154	71.704	33.528	63.676	1.00	28.91	O
ATOM	3818	CB	ASN	B	154	68.417	33.836	63.680	1.00	28.21	C
ATOM	3819	CG	ASN	B	154	67.595	33.415	64.907	1.00	39.80	C
ATOM	3820	OD1	ASN	B	154	66.569	33.992	65.266	1.00	42.56	O
ATOM	3821	ND2	ASN	B	154	68.119	32.409	65.605	1.00	41.92	N

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ATOM   3822  N   ALA B 155      71.229  35.349  62.536  1.00 19.55           N
ATOM   3823  CA  ALA B 155      72.407  35.276  61.729  1.00 21.10           C
ATOM   3824  C   ALA B 155      73.666  35.848  62.390  1.00 19.96           C
ATOM   3825  O   ALA B 155      74.765  35.498  61.967  1.00 19.05           O
ATOM   3826  CB  ALA B 155      72.207  36.110  60.446  1.00 24.59           C
ATOM   3827  N   ARG B 156      73.440  36.658  63.427  1.00 19.26           N
ATOM   3828  CA  ARG B 156      74.601  37.336  64.006  1.00 26.41           C
ATOM   3829  C   ARG B 156      75.771  36.457  64.418  1.00 18.67           C
ATOM   3830  O   ARG B 156      76.914  36.682  64.000  1.00 19.84           O
ATOM   3831  CB  ARG B 156      74.141  38.185  65.207  1.00 21.59           C
ATOM   3832  CG  ARG B 156      75.359  38.989  65.714  1.00 20.92           C
ATOM   3833  CD  ARG B 156      74.928  40.415  65.920  1.00 23.67           C
ATOM   3834  NE  ARG B 156      75.912  41.117  66.780  1.00 21.37           N
ATOM   3835  CZ  ARG B 156      75.490  41.785  67.855  1.00 28.37           C
ATOM   3836  NH1 ARG B 156      74.198  41.794  68.117  1.00 28.16           N
ATOM   3837  NH2 ARG B 156      76.368  42.438  68.609  1.00 34.74           N
ATOM   3838  N   GLY B 157      75.520  35.424  65.217  1.00 20.28           N
ATOM   3839  CA  GLY B 157      76.588  34.546  65.705  1.00 24.46           C
ATOM   3840  C   GLY B 157      77.394  33.874  64.627  1.00 18.18           C
ATOM   3841  O   GLY B 157      78.598  33.833  64.470  1.00 17.26           O
ATOM   3842  N   PRO B 158      76.641  33.170  63.734  1.00 21.55           N
ATOM   3843  CA  PRO B 158      77.199  32.455  62.603  1.00 18.68           C
ATOM   3844  C   PRO B 158      77.948  33.430  61.706  1.00 15.85           C
ATOM   3845  O   PRO B 158      78.981  33.067  61.152  1.00 17.84           O
ATOM   3846  CB  PRO B 158      76.024  31.762  61.910  1.00 20.46           C
ATOM   3847  CG  PRO B 158      75.007  31.699  63.043  1.00 20.08           C
ATOM   3848  CD  PRO B 158      75.200  32.970  63.847  1.00 21.53           C
ATOM   3849  N   GLN B 159      77.459  34.652  61.491  1.00 20.97           N
ATOM   3850  CA  GLN B 159      78.154  35.643  60.669  1.00 24.31           C
ATOM   3851  C   GLN B 159      79.452  36.120  61.316  1.00 16.22           C
ATOM   3852  O   GLN B 159      80.465  36.222  60.622  1.00 17.79           O
ATOM   3853  CB  GLN B 159      77.224  36.821  60.334  1.00 20.42           C
ATOM   3854  CG  GLN B 159      76.138  36.406  59.331  1.00 15.14           C
ATOM   3855  CD  GLN B 159      75.227  37.553  58.938  1.00 22.68           C
ATOM   3856  OE1 GLN B 159      75.105  38.528  59.677  1.00 21.04           O
ATOM   3857  NE2 GLN B 159      74.576  37.389  57.768  1.00 19.53           N
ATOM   3858  N   GLN B 160      79.471  36.244  62.622  1.00 22.08           N
ATOM   3859  CA  GLN B 160      80.740  36.575  63.308  1.00 23.01           C
ATOM   3860  C   GLN B 160      81.735  35.435  63.139  1.00 20.22           C
ATOM   3861  O   GLN B 160      82.915  35.648  62.850  1.00 18.55           O
ATOM   3862  CB  GLN B 160      80.541  36.850  64.779  1.00 21.58           C
ATOM   3863  CG  GLN B 160      79.630  38.029  65.115  1.00 29.04           C
ATOM   3864  CD  GLN B 160      79.304  38.031  66.599  1.00 30.14           C
ATOM   3865  OE1 GLN B 160      79.323  36.968  67.230  1.00 33.19           O
ATOM   3866  NE2 GLN B 160      78.976  39.169  67.174  1.00 26.06           N
ATOM   3867  N   GLU B 161      81.253  34.177  63.293  1.00 20.88           N
ATOM   3868  CA  GLU B 161      82.152  33.059  63.057  1.00 19.00           C
ATOM   3869  C   GLU B 161      82.647  33.067  61.610  1.00 15.67           C
ATOM   3870  O   GLU B 161      83.811  32.804  61.387  1.00 16.94           O
ATOM   3871  CB  GLU B 161      81.484  31.713  63.351  1.00 19.88           C
ATOM   3872  CG  GLU B 161      82.362  30.484  63.169  1.00 26.32           C
ATOM   3873  CD  GLU B 161      81.686  29.167  63.519  1.00 31.91           C
ATOM   3874  OE1 GLU B 161      80.710  29.144  64.301  1.00 28.71           O
ATOM   3875  OE2 GLU B 161      82.134  28.110  63.009  1.00 28.21           O
ATOM   3876  N   ALA B 162      81.746  33.316  60.652  1.00 16.26           N
ATOM   3877  CA  ALA B 162      82.176  33.282  59.262  1.00 16.15           C
ATOM   3878  C   ALA B 162      83.222  34.367  58.954  1.00 14.47           C
ATOM   3879  O   ALA B 162      84.159  34.044  58.223  1.00 17.52           O
ATOM   3880  CB  ALA B 162      80.982  33.487  58.322  1.00 17.33           C
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ATOM	3881	N	ILE	B	163	82.968	35.572	59.486	1.00	15.58	N
ATOM	3882	CA	ILE	B	163	83.957	36.628	59.133	1.00	14.22	C
ATOM	3883	C	ILE	B	163	85.293	36.372	59.844	1.00	17.29	C
ATOM	3884	O	ILE	B	163	86.339	36.439	59.202	1.00	18.10	O
ATOM	3885	CB	ILE	B	163	83.382	38.015	59.471	1.00	18.52	C
ATOM	3886	CG1	ILE	B	163	82.140	38.248	58.603	1.00	18.71	C
ATOM	3887	CG2	ILE	B	163	84.425	39.094	59.237	1.00	16.28	C
ATOM	3888	CD1	ILE	B	163	81.358	39.499	58.982	1.00	19.48	C
ATOM	3889	N	GLY	B	164	85.219	35.958	61.110	1.00	20.76	N
ATOM	3890	CA	GLY	B	164	86.449	35.554	61.813	1.00	19.29	C
ATOM	3891	C	GLY	B	164	87.190	34.462	61.061	1.00	16.00	C
ATOM	3892	O	GLY	B	164	88.385	34.511	60.721	1.00	21.59	O
ATOM	3893	N	TYR	B	165	86.441	33.459	60.539	1.00	21.55	N
ATOM	3894	CA	TYR	B	165	87.076	32.430	59.709	1.00	19.82	C
ATOM	3895	C	TYR	B	165	87.811	33.022	58.525	1.00	22.07	C
ATOM	3896	O	TYR	B	165	88.962	32.742	58.212	1.00	19.77	O
ATOM	3897	CB	TYR	B	165	86.058	31.346	59.295	1.00	19.85	C
ATOM	3898	CG	TYR	B	165	86.698	30.256	58.488	1.00	19.36	C
ATOM	3899	CD1	TYR	B	165	87.436	29.240	59.125	1.00	18.97	C
ATOM	3900	CD2	TYR	B	165	86.671	30.208	57.100	1.00	15.34	C
ATOM	3901	CE1	TYR	B	165	88.053	28.270	58.376	1.00	20.37	C
ATOM	3902	CE2	TYR	B	165	87.284	29.236	56.350	1.00	20.09	C
ATOM	3903	CZ	TYR	B	165	87.974	28.229	57.005	1.00	21.43	C
ATOM	3904	OH	TYR	B	165	88.595	27.252	56.252	1.00	22.80	O
ATOM	3905	N	ALA	B	166	87.155	33.915	57.749	1.00	17.04	N
ATOM	3906	CA	ALA	B	166	87.725	34.565	56.613	1.00	18.38	C
ATOM	3907	C	ALA	B	166	89.059	35.250	56.956	1.00	14.16	C
ATOM	3908	O	ALA	B	166	90.040	34.989	56.274	1.00	19.46	O
ATOM	3909	CB	ALA	B	166	86.662	35.520	56.061	1.00	19.60	C
ATOM	3910	N	ILE	B	167	89.027	36.047	58.033	1.00	18.27	N
ATOM	3911	CA	ILE	B	167	90.266	36.704	58.446	1.00	18.66	C
ATOM	3912	C	ILE	B	167	91.386	35.684	58.772	1.00	17.26	C
ATOM	3913	O	ILE	B	167	92.496	35.827	58.326	1.00	18.08	O
ATOM	3914	CB	ILE	B	167	90.000	37.589	59.654	1.00	14.42	C
ATOM	3915	CG1	ILE	B	167	89.059	38.761	59.275	1.00	18.50	C
ATOM	3916	CG2	ILE	B	167	91.311	38.167	60.174	1.00	16.55	C
ATOM	3917	CD1	ILE	B	167	88.377	39.388	60.481	1.00	24.38	C
ATOM	3918	N	SER	B	168	90.966	34.656	59.532	1.00	22.19	N
ATOM	3919	CA	SER	B	168	91.957	33.617	59.886	1.00	19.64	C
ATOM	3920	C	SER	B	168	92.588	32.977	58.677	1.00	21.84	C
ATOM	3921	O	SER	B	168	93.758	32.547	58.729	1.00	21.47	O
ATOM	3922	CB	SER	B	168	91.301	32.584	60.815	1.00	19.90	C
ATOM	3923	OG	SER	B	168	90.604	31.576	60.094	1.00	22.30	O
ATOM	3924	N	GLN	B	169	91.930	32.830	57.528	1.00	17.10	N
ATOM	3925	CA	GLN	B	169	92.461	32.225	56.332	1.00	19.22	C
ATOM	3926	C	GLN	B	169	93.170	33.155	55.375	1.00	16.88	C
ATOM	3927	O	GLN	B	169	93.714	32.693	54.354	1.00	17.87	O
ATOM	3928	CB	GLN	B	169	91.354	31.448	55.573	1.00	20.00	C
ATOM	3929	CG	GLN	B	169	90.545	30.491	56.437	1.00	19.27	C
ATOM	3930	CD	GLN	B	169	91.447	29.334	56.948	1.00	15.65	C
ATOM	3931	OE1	GLN	B	169	92.035	28.669	56.116	1.00	21.59	O
ATOM	3932	NE2	GLN	B	169	91.500	29.311	58.271	1.00	20.57	N
ATOM	3933	N	LEU	B	170	93.261	34.470	55.692	1.00	17.99	N
ATOM	3934	CA	LEU	B	170	93.877	35.454	54.837	1.00	21.91	C
ATOM	3935	C	LEU	B	170	95.005	36.226	55.501	1.00	22.99	C
ATOM	3936	O	LEU	B	170	95.210	37.430	55.365	1.00	22.45	O
ATOM	3937	CB	LEU	B	170	92.771	36.441	54.362	1.00	19.03	C
ATOM	3938	CG	LEU	B	170	91.787	35.709	53.389	1.00	11.90	C
ATOM	3939	CD1	LEU	B	170	90.504	36.553	53.408	1.00	20.05	C

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ATOM   3940  CD2 LEU B 170      92.333  35.528  52.010  1.00 16.63           C
ATOM   3941  N   GLN B 171      95.834  35.461  56.212  1.00 22.80           N
ATOM   3942  CA  GLN B 171      96.962  36.026  56.963  1.00 19.78           C
ATOM   3943  C   GLN B 171      98.268  35.782  56.247  1.00 24.71           C
ATOM   3944  O   GLN B 171      98.874  34.698  56.310  1.00 25.88           O
ATOM   3945  CB  GLN B 171      96.965  35.418  58.367  1.00 20.61           C
ATOM   3946  CG  GLN B 171      95.775  35.673  59.248  1.00 24.02           C
ATOM   3947  CD  GLN B 171      95.650  37.161  59.536  1.00 28.19           C
ATOM   3948  OE1 GLN B 171      96.632  37.693  60.055  1.00 24.58           O
ATOM   3949  NE2 GLN B 171      94.512  37.768  59.202  1.00 21.14           N
ATOM   3950  N   ALA B 172      98.685  36.743  55.428  1.00 21.73           N
ATOM   3951  CA  ALA B 172      99.921  36.699  54.683  1.00 18.05           C
ATOM   3952  C   ALA B 172     100.420  38.147  54.555  1.00 27.99           C
ATOM   3953  O   ALA B 172      99.603  39.072  54.673  1.00 25.60           O
ATOM   3954  CB  ALA B 172      99.768  36.013  53.353  1.00 19.69           C
ATOM   3955  N   SER B 173     101.690  38.324  54.224  1.00 30.83           N
ATOM   3956  CA  SER B 173     102.318  39.617  54.015  1.00 31.75           C
ATOM   3957  C   SER B 173     101.873  40.447  52.825  1.00 30.88           C
ATOM   3958  O   SER B 173     102.192  41.639  52.676  1.00 32.10           O
ATOM   3959  CB  SER B 173     103.847  39.346  53.804  1.00 22.83           C
ATOM   3960  OG  SER B 173     104.156  39.184  52.435  1.00 45.16           O
ATOM   3961  N   HIS B 174     101.240  39.848  51.822  1.00 22.71           N
ATOM   3962  CA  HIS B 174     100.821  40.532  50.613  1.00 24.45           C
ATOM   3963  C   HIS B 174      99.304  40.744  50.591  1.00 19.78           C
ATOM   3964  O   HIS B 174      98.803  41.254  49.599  1.00 26.27           O
ATOM   3965  CB  HIS B 174     101.204  39.783  49.362  1.00 22.82           C
ATOM   3966  CG  HIS B 174     100.641  38.397  49.255  1.00 28.16           C
ATOM   3967  ND1 HIS B 174     100.753  37.458  50.253  1.00 35.93           N
ATOM   3968  CD2 HIS B 174      99.977  37.810  48.229  1.00 27.74           C
ATOM   3969  CE1 HIS B 174     100.171  36.342  49.850  1.00 28.43           C
ATOM   3970  NE2 HIS B 174      99.721  36.506  48.620  1.00 25.95           N
ATOM   3971  N   ILE B 175      98.683  40.341  51.682  1.00 21.04           N
ATOM   3972  CA  ILE B 175      97.208  40.486  51.755  1.00 22.53           C
ATOM   3973  C   ILE B 175      96.883  41.436  52.878  1.00 23.42           C
ATOM   3974  O   ILE B 175      97.264  41.229  54.036  1.00 21.16           O
ATOM   3975  CB  ILE B 175      96.602  39.086  51.998  1.00 24.23           C
ATOM   3976  CG1 ILE B 175      97.093  38.037  51.010  1.00 19.57           C
ATOM   3977  CG2 ILE B 175      95.075  39.209  51.938  1.00 23.51           C
ATOM   3978  CD1 ILE B 175      96.634  36.620  51.311  1.00 21.61           C
ATOM   3979  N   HIS B 176      96.217  42.567  52.570  1.00 17.50           N
ATOM   3980  CA  HIS B 176      95.889  43.636  53.469  1.00 20.14           C
ATOM   3981  C   HIS B 176      94.360  43.710  53.601  1.00 21.15           C
ATOM   3982  O   HIS B 176      93.697  43.974  52.598  1.00 21.58           O
ATOM   3983  CB  HIS B 176      96.463  44.968  52.938  1.00 21.60           C
ATOM   3984  CG  HIS B 176      97.862  44.760  52.425  1.00 26.55           C
ATOM   3985  ND1 HIS B 176      98.891  44.778  53.345  1.00 28.92           N
ATOM   3986  CD2 HIS B 176      98.398  44.491  51.223  1.00 21.41           C
ATOM   3987  CE1 HIS B 176     100.000  44.545  52.699  1.00 16.22           C
ATOM   3988  NE2 HIS B 176      99.771  44.351  51.420  1.00 24.82           N
ATOM   3989  N   LEU B 177      93.930  43.374  54.787  1.00 19.28           N
ATOM   3990  CA  LEU B 177      92.523  43.207  55.083  1.00 20.75           C
ATOM   3991  C   LEU B 177      91.935  44.466  55.688  1.00 21.35           C
ATOM   3992  O   LEU B 177      92.383  45.057  56.659  1.00 19.15           O
ATOM   3993  CB  LEU B 177      92.288  42.047  56.057  1.00 22.63           C
ATOM   3994  CG  LEU B 177      92.910  40.694  55.691  1.00 19.00           C
ATOM   3995  CD1 LEU B 177      92.545  39.675  56.773  1.00 19.67           C
ATOM   3996  CD2 LEU B 177      92.457  40.201  54.318  1.00 19.27           C
ATOM   3997  N   TYR B 178      90.787  44.840  55.114  1.00 14.82           N
ATOM   3998  CA  TYR B 178      89.982  45.956  55.543  1.00 15.89           C
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ATOM   3999  C   TYR B 178      88.565  45.492  55.865  1.00 14.99           C
ATOM   4000  O   TYR B 178      87.795  45.103  54.968  1.00 17.46           O
ATOM   4001  CB  TYR B 178      90.003  47.028  54.452  1.00 13.76           C
ATOM   4002  CG  TYR B 178      91.363  47.691  54.257  1.00 18.56           C
ATOM   4003  CD1 TYR B 178      92.255  47.228  53.310  1.00 16.23           C
ATOM   4004  CD2 TYR B 178      91.664  48.817  55.003  1.00 14.49           C
ATOM   4005  CE1 TYR B 178      93.490  47.848  53.135  1.00 19.41           C
ATOM   4006  CE2 TYR B 178      92.889  49.453  54.813  1.00 13.99           C
ATOM   4007  CZ  TYR B 178      93.779  48.971  53.891  1.00 18.09           C
ATOM   4008  OH  TYR B 178      94.996  49.588  53.671  1.00 19.67           O
ATOM   4009  N   LEU B 179      88.252  45.433  57.155  1.00 14.15           N
ATOM   4010  CA  LEU B 179      86.945  44.949  57.574  1.00 15.09           C
ATOM   4011  C   LEU B 179      85.908  46.031  57.335  1.00 18.64           C
ATOM   4012  O   LEU B 179      86.125  47.170  57.773  1.00 15.59           O
ATOM   4013  CB  LEU B 179      87.029  44.576  59.053  1.00 17.68           C
ATOM   4014  CG  LEU B 179      85.858  43.984  59.803  1.00 19.25           C
ATOM   4015  CD1 LEU B 179      85.208  42.837  59.020  1.00 17.72           C
ATOM   4016  CD2 LEU B 179      86.352  43.412  61.146  1.00 19.10           C
ATOM   4017  N   ASP B 180      84.827  45.736  56.611  1.00 13.88           N
ATOM   4018  CA  ASP B 180      83.869  46.850  56.364  1.00 11.40           C
ATOM   4019  C   ASP B 180      83.148  47.333  57.600  1.00 16.37           C
ATOM   4020  O   ASP B 180      82.611  46.570  58.398  1.00 16.08           O
ATOM   4021  CB  ASP B 180      82.804  46.411  55.332  1.00 16.37           C
ATOM   4022  CG  ASP B 180      81.995  47.642  54.897  1.00 11.61           C
ATOM   4023  OD1 ASP B 180      82.599  48.428  54.135  1.00 16.82           O
ATOM   4024  OD2 ASP B 180      80.862  47.773  55.344  1.00 14.55           O
ATOM   4025  N   VAL B 181      82.956  48.678  57.708  1.00 12.65           N
ATOM   4026  CA  VAL B 181      82.199  49.268  58.767  1.00 14.80           C
ATOM   4027  C   VAL B 181      81.137  50.252  58.253  1.00 14.21           C
ATOM   4028  O   VAL B 181      80.827  51.259  58.862  1.00 15.92           O
ATOM   4029  CB  VAL B 181      83.023  49.951  59.867  1.00 17.14           C
ATOM   4030  CG1 VAL B 181      83.817  48.896  60.638  1.00 16.17           C
ATOM   4031  CG2 VAL B 181      84.003  50.983  59.295  1.00 13.24           C
ATOM   4032  N   ALA B 182      80.488  49.882  57.152  1.00 14.94           N
ATOM   4033  CA  ALA B 182      79.336  50.623  56.613  1.00 13.26           C
ATOM   4034  C   ALA B 182      79.668  52.072  56.259  1.00 15.95           C
ATOM   4035  O   ALA B 182      80.574  52.224  55.459  1.00 13.82           O
ATOM   4036  CB  ALA B 182      78.077  50.580  57.479  1.00 15.06           C
ATOM   4037  N   ASN B 183      78.947  53.053  56.828  1.00 16.04           N
ATOM   4038  CA  ASN B 183      79.265  54.430  56.463  1.00 14.57           C
ATOM   4039  C   ASN B 183      78.919  55.295  57.658  1.00 16.62           C
ATOM   4040  O   ASN B 183      78.236  54.846  58.588  1.00 15.71           O
ATOM   4041  CB  ASN B 183      78.480  54.927  55.237  1.00 14.63           C
ATOM   4042  CG  ASN B 183      77.001  55.065  55.438  1.00 14.62           C
ATOM   4043  OD1 ASN B 183      76.475  56.190  55.606  1.00 13.42           O
ATOM   4044  ND2 ASN B 183      76.214  53.977  55.388  1.00 16.69           N
ATOM   4045  N   GLY B 184      79.367  56.553  57.578  1.00 14.55           N
ATOM   4046  CA  GLY B 184      79.138  57.420  58.712  1.00 16.22           C
ATOM   4047  C   GLY B 184      77.674  57.597  59.071  1.00 16.07           C
ATOM   4048  O   GLY B 184      77.376  57.813  60.275  1.00 19.13           O
ATOM   4049  N   GLY B 185      76.722  57.531  58.158  1.00 15.30           N
ATOM   4050  CA  GLY B 185      75.316  57.665  58.412  1.00 18.26           C
ATOM   4051  C   GLY B 185      74.647  56.500  59.133  1.00 20.22           C
ATOM   4052  O   GLY B 185      73.528  56.625  59.641  1.00 20.18           O
ATOM   4053  N   TRP B 186      75.328  55.354  59.138  1.00 16.86           N
ATOM   4054  CA  TRP B 186      74.807  54.152  59.763  1.00 18.31           C
ATOM   4055  C   TRP B 186      75.444  53.953  61.148  1.00 19.08           C
ATOM   4056  O   TRP B 186      74.728  53.882  62.153  1.00 19.51           O
ATOM   4057  CB  TRP B 186      75.154  52.921  58.882  1.00 15.77           C
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ATOM   4058  CG  TRP B 186      74.468  51.641  59.240  1.00 18.73           C
ATOM   4059  CD1 TRP B 186      74.001  51.208  60.459  1.00 22.80           C
ATOM   4060  CD2 TRP B 186      74.174  50.566  58.333  1.00 14.01           C
ATOM   4061  NE1 TRP B 186      73.426  49.957  60.363  1.00 19.33           N
ATOM   4062  CE2 TRP B 186      73.513  49.549  59.061  1.00 18.76           C
ATOM   4063  CE3 TRP B 186      74.372  50.359  56.967  1.00 16.51           C
ATOM   4064  CZ2 TRP B 186      73.074  48.368  58.453  1.00 16.28           C
ATOM   4065  CZ3 TRP B 186      73.948  49.190  56.367  1.00 17.55           C
ATOM   4066  CH2 TRP B 186      73.296  48.210  57.115  1.00 18.14           C
ATOM   4067  N   LEU B 187      76.769  53.926  61.187  1.00 18.02           N
ATOM   4068  CA  LEU B 187      77.494  53.658  62.420  1.00 17.51           C
ATOM   4069  C   LEU B 187      78.296  54.812  62.993  1.00 22.64           C
ATOM   4070  O   LEU B 187      79.034  54.668  63.989  1.00 19.42           O
ATOM   4071  CB  LEU B 187      78.456  52.469  62.187  1.00 12.33           C
ATOM   4072  CG  LEU B 187      77.746  51.144  61.813  1.00 13.44           C
ATOM   4073  CD1 LEU B 187      78.720  50.036  61.481  1.00 16.68           C
ATOM   4074  CD2 LEU B 187      76.737  50.778  62.907  1.00 16.94           C
ATOM   4075  N   GLY B 188      78.154  56.008  62.417  1.00 17.49           N
ATOM   4076  CA  GLY B 188      79.042  57.102  62.879  1.00 18.99           C
ATOM   4077  C   GLY B 188      78.385  58.011  63.904  1.00 21.19           C
ATOM   4078  O   GLY B 188      78.987  59.012  64.334  1.00 22.58           O
ATOM   4079  N   TRP B 189      77.171  57.698  64.335  1.00 19.19           N
ATOM   4080  CA  TRP B 189      76.481  58.462  65.351  1.00 18.56           C
ATOM   4081  C   TRP B 189      77.189  58.251  66.686  1.00 17.15           C
ATOM   4082  O   TRP B 189      77.791  57.202  66.914  1.00 21.16           O
ATOM   4083  CB  TRP B 189      75.038  58.019  65.527  1.00 24.63           C
ATOM   4084  CG  TRP B 189      74.290  58.220  64.240  1.00 21.45           C
ATOM   4085  CD1 TRP B 189      74.115  57.301  63.254  1.00 20.66           C
ATOM   4086  CD2 TRP B 189      73.654  59.425  63.814  1.00 20.71           C
ATOM   4087  NE1 TRP B 189      73.387  57.843  62.228  1.00 23.07           N
ATOM   4088  CE2 TRP B 189      73.081  59.145  62.543  1.00 20.52           C
ATOM   4089  CE3 TRP B 189      73.489  60.689  64.367  1.00 22.01           C
ATOM   4090  CZ2 TRP B 189      72.370  60.107  61.830  1.00 30.12           C
ATOM   4091  CZ3 TRP B 189      72.785  61.648  63.657  1.00 31.63           C
ATOM   4092  CH2 TRP B 189      72.227  61.336  62.411  1.00 25.50           C
ATOM   4093  N   ALA B 190      77.038  59.277  67.527  1.00 22.55           N
ATOM   4094  CA  ALA B 190      77.668  59.162  68.838  1.00 20.98           C
ATOM   4095  C   ALA B 190      77.286  57.850  69.521  1.00 20.20           C
ATOM   4096  O   ALA B 190      78.187  57.320  70.172  1.00 22.91           O
ATOM   4097  CB  ALA B 190      77.260  60.333  69.720  1.00 20.91           C
ATOM   4098  N   ASP B 191      76.053  57.388  69.485  1.00 21.69           N
ATOM   4099  CA  ASP B 191      75.726  56.149  70.196  1.00 21.21           C
ATOM   4100  C   ASP B 191      76.133  54.889  69.452  1.00 25.03           C
ATOM   4101  O   ASP B 191      75.835  53.780  69.936  1.00 27.43           O
ATOM   4102  CB  ASP B 191      74.242  56.161  70.528  1.00 23.50           C
ATOM   4103  CG  ASP B 191      73.313  56.167  69.337  1.00 34.66           C
ATOM   4104  OD1 ASP B 191      73.715  56.403  68.185  1.00 28.87           O
ATOM   4105  OD2 ASP B 191      72.102  55.925  69.521  1.00 39.36           O
ATOM   4106  N   LYS B 192      76.708  54.961  68.244  1.00 22.39           N
ATOM   4107  CA  LYS B 192      77.035  53.753  67.497  1.00 21.64           C
ATOM   4108  C   LYS B 192      78.505  53.458  67.315  1.00 18.45           C
ATOM   4109  O   LYS B 192      78.925  52.341  66.985  1.00 19.82           O
ATOM   4110  CB  LYS B 192      76.397  53.858  66.095  1.00 18.64           C
ATOM   4111  CG  LYS B 192      74.909  54.087  66.080  1.00 27.26           C
ATOM   4112  CD  LYS B 192      74.112  52.803  65.949  1.00 32.40           C
ATOM   4113  CE  LYS B 192      73.210  52.595  67.147  1.00 45.02           C
ATOM   4114  NZ  LYS B 192      71.956  53.403  67.110  1.00 39.32           N
ATOM   4115  N   LEU B 193      79.362  54.470  67.635  1.00 18.85           N
ATOM   4116  CA  LEU B 193      80.785  54.260  67.463  1.00 16.44           C
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ATOM	4117	C	LEU	B	193	81.337	53.159	68.374	1.00	17.74	C
ATOM	4118	O	LEU	B	193	82.117	52.317	67.925	1.00	17.73	O
ATOM	4119	CB	LEU	B	193	81.543	55.578	67.670	1.00	22.25	C
ATOM	4120	CG	LEU	B	193	81.264	56.699	66.645	1.00	20.40	C
ATOM	4121	CD1	LEU	B	193	81.824	57.997	67.255	1.00	23.94	C
ATOM	4122	CD2	LEU	B	193	81.909	56.441	65.302	1.00	20.89	C
ATOM	4123	N	GLU	B	194	80.957	53.189	69.666	1.00	21.89	N
ATOM	4124	CA	GLU	B	194	81.459	52.212	70.634	1.00	23.64	C
ATOM	4125	C	GLU	B	194	80.961	50.799	70.321	1.00	16.92	C
ATOM	4126	O	GLU	B	194	81.784	49.916	70.239	1.00	20.19	O
ATOM	4127	CB	GLU	B	194	81.192	52.617	72.090	1.00	22.40	C
ATOM	4128	CG	GLU	B	194	82.108	53.730	72.607	1.00	21.77	C
ATOM	4129	CD	GLU	B	194	83.523	53.298	72.932	1.00	22.30	C
ATOM	4130	OE1	GLU	B	194	83.765	52.158	73.360	1.00	24.06	O
ATOM	4131	OE2	GLU	B	194	84.489	54.101	72.809	1.00	21.90	O
ATOM	4132	N	PRO	B	195	79.693	50.673	70.037	1.00	17.89	N
ATOM	4133	CA	PRO	B	195	79.115	49.382	69.643	1.00	20.40	C
ATOM	4134	C	PRO	B	195	79.814	48.784	68.438	1.00	22.63	C
ATOM	4135	O	PRO	B	195	80.025	47.563	68.298	1.00	22.72	O
ATOM	4136	CB	PRO	B	195	77.645	49.719	69.321	1.00	23.25	C
ATOM	4137	CG	PRO	B	195	77.372	50.862	70.264	1.00	22.51	C
ATOM	4138	CD	PRO	B	195	78.666	51.682	70.278	1.00	19.04	C
ATOM	4139	N	THR	B	196	80.172	49.638	67.447	1.00	20.58	N
ATOM	4140	CA	THR	B	196	80.898	49.206	66.266	1.00	19.89	C
ATOM	4141	C	THR	B	196	82.272	48.665	66.635	1.00	24.24	C
ATOM	4142	O	THR	B	196	82.738	47.623	66.194	1.00	22.29	O
ATOM	4143	CB	THR	B	196	81.134	50.350	65.244	1.00	17.63	C
ATOM	4144	OG1	THR	B	196	79.848	50.839	64.879	1.00	19.07	O
ATOM	4145	CG2	THR	B	196	81.931	49.843	64.041	1.00	17.48	C
ATOM	4146	N	ALA	B	197	82.973	49.394	67.506	1.00	20.28	N
ATOM	4147	CA	ALA	B	197	84.267	48.931	67.971	1.00	17.40	C
ATOM	4148	C	ALA	B	197	84.169	47.590	68.726	1.00	17.96	C
ATOM	4149	O	ALA	B	197	85.070	46.783	68.539	1.00	19.17	O
ATOM	4150	CB	ALA	B	197	84.848	50.007	68.893	1.00	18.28	C
ATOM	4151	N	GLN	B	198	83.109	47.400	69.483	1.00	24.07	N
ATOM	4152	CA	GLN	B	198	82.891	46.175	70.250	1.00	20.46	C
ATOM	4153	C	GLN	B	198	82.731	44.999	69.282	1.00	24.02	C
ATOM	4154	O	GLN	B	198	83.379	43.965	69.426	1.00	20.77	O
ATOM	4155	CB	GLN	B	198	81.635	46.302	71.091	1.00	24.08	C
ATOM	4156	CG	GLN	B	198	81.336	45.090	72.005	1.00	24.24	C
ATOM	4157	CD	GLN	B	198	81.023	45.766	73.348	1.00	46.63	C
ATOM	4158	OE1	GLN	B	198	81.914	46.254	74.057	1.00	49.94	O
ATOM	4159	NE2	GLN	B	198	79.738	45.868	73.646	1.00	32.33	N
ATOM	4160	N	GLU	B	199	81.964	45.263	68.206	1.00	21.26	N
ATOM	4161	CA	GLU	B	199	81.710	44.210	67.219	1.00	17.59	C
ATOM	4162	C	GLU	B	199	82.962	43.750	66.546	1.00	18.76	C
ATOM	4163	O	GLU	B	199	83.259	42.572	66.319	1.00	20.01	O
ATOM	4164	CB	GLU	B	199	80.661	44.680	66.175	1.00	14.84	C
ATOM	4165	CG	GLU	B	199	80.115	43.422	65.480	1.00	21.74	C
ATOM	4166	CD	GLU	B	199	79.175	42.675	66.415	1.00	22.93	C
ATOM	4167	OE1	GLU	B	199	78.933	43.099	67.563	1.00	25.14	O
ATOM	4168	OE2	GLU	B	199	78.683	41.609	66.000	1.00	25.57	O
ATOM	4169	N	VAL	B	200	83.858	44.700	66.188	1.00	18.66	N
ATOM	4170	CA	VAL	B	200	85.154	44.447	65.642	1.00	15.67	C
ATOM	4171	C	VAL	B	200	85.989	43.606	66.611	1.00	20.44	C
ATOM	4172	O	VAL	B	200	86.705	42.706	66.180	1.00	19.49	O
ATOM	4173	CB	VAL	B	200	85.847	45.774	65.268	1.00	15.78	C
ATOM	4174	CG1	VAL	B	200	87.303	45.574	64.934	1.00	15.44	C
ATOM	4175	CG2	VAL	B	200	85.140	46.395	64.055	1.00	20.64	C

ATOM	4176	N	ALA	B	201	85.954	43.931	67.904	1.00	21.57	N
ATOM	4177	CA	ALA	B	201	86.771	43.176	68.863	1.00	21.21	C
ATOM	4178	C	ALA	B	201	86.249	41.746	68.914	1.00	23.43	C
ATOM	4179	O	ALA	B	201	87.070	40.840	68.864	1.00	23.67	O
ATOM	4180	CB	ALA	B	201	86.701	43.889	70.203	1.00	24.56	C
ATOM	4181	N	THR	B	202	84.935	41.591	69.002	1.00	17.97	N
ATOM	4182	CA	THR	B	202	84.363	40.229	69.026	1.00	21.03	C
ATOM	4183	C	THR	B	202	84.776	39.414	67.816	1.00	23.31	C
ATOM	4184	O	THR	B	202	85.291	38.288	67.880	1.00	22.39	O
ATOM	4185	CB	THR	B	202	82.846	40.408	69.146	1.00	21.23	C
ATOM	4186	OG1	THR	B	202	82.532	40.984	70.419	1.00	26.10	O
ATOM	4187	CG2	THR	B	202	82.103	39.075	69.021	1.00	19.41	C
ATOM	4188	N	ILE	B	203	84.649	39.961	66.604	1.00	20.55	N
ATOM	4189	CA	ILE	B	203	85.060	39.248	65.383	1.00	17.22	C
ATOM	4190	C	ILE	B	203	86.537	38.940	65.344	1.00	21.69	C
ATOM	4191	O	ILE	B	203	86.960	37.849	64.925	1.00	24.70	O
ATOM	4192	CB	ILE	B	203	84.671	40.097	64.146	1.00	23.56	C
ATOM	4193	CG1	ILE	B	203	83.156	40.158	64.079	1.00	20.76	C
ATOM	4194	CG2	ILE	B	203	85.266	39.551	62.854	1.00	22.65	C
ATOM	4195	CD1	ILE	B	203	82.542	41.185	63.182	1.00	16.15	C
ATOM	4196	N	LEU	B	204	87.374	39.870	65.815	1.00	21.97	N
ATOM	4197	CA	LEU	B	204	88.808	39.629	65.818	1.00	21.00	C
ATOM	4198	C	LEU	B	204	89.142	38.558	66.871	1.00	19.40	C
ATOM	4199	O	LEU	B	204	90.024	37.761	66.581	1.00	22.15	O
ATOM	4200	CB	LEU	B	204	89.636	40.903	66.041	1.00	22.16	C
ATOM	4201	CG	LEU	B	204	89.683	41.872	64.860	1.00	26.66	C
ATOM	4202	CD1	LEU	B	204	90.227	43.248	65.256	1.00	20.14	C
ATOM	4203	CD2	LEU	B	204	90.510	41.268	63.734	1.00	19.60	C
ATOM	4204	N	GLN	B	205	88.431	38.536	67.984	1.00	25.29	N
ATOM	4205	CA	GLN	B	205	88.689	37.441	68.953	1.00	29.23	C
ATOM	4206	C	GLN	B	205	88.481	36.104	68.240	1.00	29.46	C
ATOM	4207	O	GLN	B	205	89.308	35.183	68.275	1.00	31.76	O
ATOM	4208	CB	GLN	B	205	87.778	37.588	70.156	1.00	31.93	C
ATOM	4209	CG	GLN	B	205	87.873	38.892	70.913	1.00	36.03	C
ATOM	4210	CD	GLN	B	205	86.973	39.045	72.115	1.00	53.54	C
ATOM	4211	OE1	GLN	B	205	85.754	39.207	72.055	1.00	58.56	O
ATOM	4212	NE2	GLN	B	205	87.591	39.016	73.298	1.00	59.02	N
ATOM	4213	N	LYS	B	206	87.366	35.960	67.515	1.00	27.02	N
ATOM	4214	CA	LYS	B	206	87.055	34.738	66.782	1.00	29.14	C
ATOM	4215	C	LYS	B	206	88.019	34.360	65.687	1.00	30.36	C
ATOM	4216	O	LYS	B	206	88.238	33.180	65.372	1.00	34.85	O
ATOM	4217	CB	LYS	B	206	85.620	34.848	66.211	1.00	27.96	C
ATOM	4218	CG	LYS	B	206	84.561	34.708	67.291	1.00	26.91	C
ATOM	4219	CD	LYS	B	206	83.195	35.168	66.822	1.00	36.28	C
ATOM	4220	CE	LYS	B	206	82.131	35.001	67.890	1.00	37.81	C
ATOM	4221	NZ	LYS	B	206	82.314	33.718	68.638	1.00	46.57	N
ATOM	4222	N	ALA	B	207	88.716	35.284	65.050	1.00	18.42	N
ATOM	4223	CA	ALA	B	207	89.696	35.096	64.023	1.00	19.99	C
ATOM	4224	C	ALA	B	207	90.984	34.424	64.499	1.00	22.55	C
ATOM	4225	O	ALA	B	207	91.703	33.827	63.706	1.00	29.59	O
ATOM	4226	CB	ALA	B	207	90.061	36.463	63.428	1.00	24.95	C
ATOM	4227	N	GLY	B	208	91.259	34.556	65.796	1.00	24.32	N
ATOM	4228	CA	GLY	B	208	92.446	33.948	66.388	1.00	29.50	C
ATOM	4229	C	GLY	B	208	93.367	34.971	67.047	1.00	33.60	C
ATOM	4230	O	GLY	B	208	93.393	36.160	66.727	1.00	29.02	O
ATOM	4231	N	ASN	B	209	94.179	34.483	67.985	1.00	32.42	N
ATOM	4232	CA	ASN	B	209	95.127	35.288	68.723	1.00	36.56	C
ATOM	4233	C	ASN	B	209	96.022	36.241	67.969	1.00	35.01	C
ATOM	4234	O	ASN	B	209	96.286	37.375	68.368	1.00	39.29	O

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ATOM   4235  CB  ASN B 209      96.102  34.307  69.434  1.00 40.51           C
ATOM   4236  CG  ASN B 209      95.501  34.026  70.802  1.00 45.73           C
ATOM   4237  OD1 ASN B 209      95.316  34.992  71.541  1.00 45.04           O
ATOM   4238  ND2 ASN B 209      95.202  32.771  71.083  1.00 46.97           N
ATOM   4239  N   ASN B 210      96.639  35.699  66.922  1.00 32.93           N
ATOM   4240  CA  ASN B 210      97.585  36.441  66.113  1.00 32.79           C
ATOM   4241  C   ASN B 210      96.962  36.953  64.824  1.00 31.82           C
ATOM   4242  O   ASN B 210      97.687  37.414  63.951  1.00 34.76           O
ATOM   4243  CB  ASN B 210      98.782  35.527  65.819  1.00 26.91           C
ATOM   4244  CG  ASN B 210      99.657  35.408  67.060  1.00 41.97           C
ATOM   4245  OD1 ASN B 210      99.999  36.425  67.659  1.00 41.64           O
ATOM   4246  ND2 ASN B 210      99.982  34.182  67.442  1.00 31.49           N
ATOM   4247  N   ALA B 211      95.653  36.837  64.699  1.00 29.07           N
ATOM   4248  CA  ALA B 211      94.971  37.289  63.492  1.00 29.41           C
ATOM   4249  C   ALA B 211      94.990  38.820  63.433  1.00 32.04           C
ATOM   4250  O   ALA B 211      94.552  39.426  64.425  1.00 32.62           O
ATOM   4251  CB  ALA B 211      93.495  36.901  63.543  1.00 23.68           C
ATOM   4252  N   LYS B 212      95.416  39.361  62.302  1.00 24.74           N
ATOM   4253  CA  LYS B 212      95.385  40.829  62.245  1.00 27.27           C
ATOM   4254  C   LYS B 212      94.603  41.298  61.021  1.00 28.66           C
ATOM   4255  O   LYS B 212      94.354  40.534  60.092  1.00 22.48           O
ATOM   4256  CB  LYS B 212      96.786  41.411  62.167  1.00 35.37           C
ATOM   4257  CG  LYS B 212      97.730  40.830  61.148  1.00 46.38           C
ATOM   4258  CD  LYS B 212      98.806  39.954  61.744  1.00 53.65           C
ATOM   4259  CE  LYS B 212      99.834  40.670  62.600  1.00 58.55           C
ATOM   4260  NZ  LYS B 212     100.782  39.680  63.206  1.00 62.28           N
ATOM   4261  N   ILE B 213      94.250  42.574  61.052  1.00 22.99           N
ATOM   4262  CA  ILE B 213      93.661  43.263  59.894  1.00 21.04           C
ATOM   4263  C   ILE B 213      94.415  44.604  59.825  1.00 21.00           C
ATOM   4264  O   ILE B 213      94.865  45.032  60.893  1.00 21.34           O
ATOM   4265  CB  ILE B 213      92.158  43.552  59.955  1.00 18.61           C
ATOM   4266  CG1 ILE B 213      91.757  44.315  61.205  1.00 19.97           C
ATOM   4267  CG2 ILE B 213      91.387  42.210  59.857  1.00 20.94           C
ATOM   4268  CD1 ILE B 213      90.298  44.682  61.343  1.00 17.36           C
ATOM   4269  N   ARG B 214      94.462  45.214  58.666  1.00 24.30           N
ATOM   4270  CA  ARG B 214      95.078  46.533  58.504  1.00 21.11           C
ATOM   4271  C   ARG B 214      94.124  47.591  59.043  1.00 24.53           C
ATOM   4272  O   ARG B 214      94.507  48.605  59.661  1.00 20.28           O
ATOM   4273  CB  ARG B 214      95.425  46.813  57.035  1.00 19.86           C
ATOM   4274  CG  ARG B 214      95.725  48.301  56.765  1.00 19.19           C
ATOM   4275  CD  ARG B 214      97.012  48.673  57.511  1.00 22.59           C
ATOM   4276  NE  ARG B 214      97.350  50.091  57.324  1.00 20.91           N
ATOM   4277  CZ  ARG B 214      98.432  50.691  57.812  1.00 24.12           C
ATOM   4278  NH1 ARG B 214      99.297  50.011  58.549  1.00 24.52           N
ATOM   4279  NH2 ARG B 214      98.666  51.992  57.600  1.00 21.57           N
ATOM   4280  N   GLY B 215      92.820  47.388  58.826  1.00 18.54           N
ATOM   4281  CA  GLY B 215      91.857  48.396  59.259  1.00 19.25           C
ATOM   4282  C   GLY B 215      90.498  48.108  58.625  1.00 19.04           C
ATOM   4283  O   GLY B 215      89.978  47.011  58.746  1.00 19.44           O
ATOM   4284  N   PHE B 216      89.815  49.203  58.277  1.00 19.68           N
ATOM   4285  CA  PHE B 216      88.409  49.183  57.895  1.00 14.50           C
ATOM   4286  C   PHE B 216      88.107  49.853  56.552  1.00 19.42           C
ATOM   4287  O   PHE B 216      88.901  50.617  56.024  1.00 15.19           O
ATOM   4288  CB  PHE B 216      87.642  49.917  59.012  1.00 17.06           C
ATOM   4289  CG  PHE B 216      88.044  49.412  60.390  1.00 17.34           C
ATOM   4290  CD1 PHE B 216      87.646  48.179  60.831  1.00 19.49           C
ATOM   4291  CD2 PHE B 216      88.926  50.166  61.174  1.00 21.89           C
ATOM   4292  CE1 PHE B 216      88.037  47.706  62.075  1.00 23.76           C
ATOM   4293  CE2 PHE B 216      89.334  49.684  62.406  1.00 19.58           C
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ATOM   4294  CZ  PHE B 216      88.890  48.452  62.870  1.00 21.70           C
ATOM   4295  N   SER B 217      86.922  49.497  56.006  1.00 16.32           N
ATOM   4296  CA  SER B 217      86.474  50.183  54.788  1.00 16.98           C
ATOM   4297  C   SER B 217      85.180  50.925  55.147  1.00 15.15           C
ATOM   4298  O   SER B 217      84.440  50.462  56.015  1.00 14.34           O
ATOM   4299  CB  SER B 217      86.227  49.279  53.606  1.00 13.74           C
ATOM   4300  OG  SER B 217      85.326  48.193  53.828  1.00 12.93           O
ATOM   4301  N   SER B 218      84.951  52.061  54.487  1.00 12.49           N
ATOM   4302  CA  SER B 218      83.675  52.747  54.704  1.00 12.51           C
ATOM   4303  C   SER B 218      83.210  53.404  53.398  1.00 12.40           C
ATOM   4304  O   SER B 218      83.985  53.623  52.462  1.00 13.94           O
ATOM   4305  CB  SER B 218      83.751  53.770  55.827  1.00 17.22           C
ATOM   4306  OG ASER B 218      84.532  54.868  55.397  0.50 14.96           O
ATOM   4307  OG BSER B 218      82.502  54.368  56.122  0.50 16.14           O
ATOM   4308  N   ASN B 219      81.929  53.702  53.337  1.00 14.12           N
ATOM   4309  CA  ASN B 219      81.208  54.299  52.231  1.00 12.90           C
ATOM   4310  C   ASN B 219      81.113  53.462  50.987  1.00 16.12           C
ATOM   4311  O   ASN B 219      80.782  53.927  49.875  1.00 12.91           O
ATOM   4312  CB  ASN B 219      81.867  55.662  51.876  1.00 10.77           C
ATOM   4313  CG  ASN B 219      80.897  56.685  51.330  1.00 16.28           C
ATOM   4314  OD1 ASN B 219      79.799  56.902  51.815  1.00 17.19           O
ATOM   4315  ND2 ASN B 219      81.306  57.374  50.250  1.00 13.28           N
ATOM   4316  N   VAL B 220      81.400  52.147  51.127  1.00 13.21           N
ATOM   4317  CA  VAL B 220      81.315  51.260  49.996  1.00 13.06           C
ATOM   4318  C   VAL B 220      79.860  51.199  49.547  1.00 13.26           C
ATOM   4319  O   VAL B 220      78.910  50.985  50.281  1.00 13.48           O
ATOM   4320  CB  VAL B 220      81.753  49.830  50.385  1.00 13.78           C
ATOM   4321  CG1 VAL B 220      81.547  48.868  49.222  1.00 13.64           C
ATOM   4322  CG2 VAL B 220      83.199  49.850  50.862  1.00 14.47           C
ATOM   4323  N   SER B 221      79.680  51.466  48.244  1.00  9.67           N
ATOM   4324  CA  SER B 221      78.378  51.572  47.610  1.00 11.45           C
ATOM   4325  C   SER B 221      77.516  52.699  48.132  1.00 13.47           C
ATOM   4326  O   SER B 221      76.336  52.762  47.785  1.00 14.77           O
ATOM   4327  CB  SER B 221      77.505  50.294  47.594  1.00 12.65           C
ATOM   4328  OG ASER B 221      76.769  50.171  48.791  0.30 18.63           O
ATOM   4329  OG BSER B 221      78.324  49.126  47.513  0.70  9.29           O
ATOM   4330  N   ASN B 222      78.085  53.611  48.902  1.00 12.82           N
ATOM   4331  CA  ASN B 222      77.345  54.753  49.412  1.00 11.81           C
ATOM   4332  C   ASN B 222      77.835  56.003  48.709  1.00 13.32           C
ATOM   4333  O   ASN B 222      78.395  55.957  47.618  1.00 14.21           O
ATOM   4334  CB  ASN B 222      77.416  54.905  50.931  1.00 10.47           C
ATOM   4335  CG  ASN B 222      76.177  55.500  51.553  1.00 21.50           C
ATOM   4336  OD1 ASN B 222      75.953  56.728  51.558  1.00 18.33           O
ATOM   4337  ND2 ASN B 222      75.378  54.578  52.121  1.00 21.35           N
ATOM   4338  N   TYR B 223      77.387  57.152  49.273  1.00 12.91           N
ATOM   4339  CA  TYR B 223      77.534  58.381  48.477  1.00 14.69           C
ATOM   4340  C   TYR B 223      78.008  59.592  49.271  1.00 15.82           C
ATOM   4341  O   TYR B 223      77.906  60.753  48.824  1.00 13.70           O
ATOM   4342  CB  TYR B 223      76.133  58.730  47.923  1.00 14.43           C
ATOM   4343  CG  TYR B 223      75.378  57.629  47.190  1.00 12.12           C
ATOM   4344  CD1 TYR B 223      74.615  56.724  47.912  1.00 17.11           C
ATOM   4345  CD2 TYR B 223      75.462  57.507  45.796  1.00 15.17           C
ATOM   4346  CE1 TYR B 223      73.946  55.694  47.297  1.00 13.38           C
ATOM   4347  CE2 TYR B 223      74.769  56.495  45.184  1.00 14.55           C
ATOM   4348  CZ  TYR B 223      74.022  55.597  45.921  1.00 12.53           C
ATOM   4349  OH  TYR B 223      73.321  54.625  45.270  1.00 14.37           O
ATOM   4350  N   ASN B 224      78.454  59.323  50.508  1.00 13.79           N
ATOM   4351  CA  ASN B 224      78.842  60.453  51.363  1.00 12.59           C
ATOM   4352  C   ASN B 224      80.120  61.070  50.847  1.00 14.44           C
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ATOM	4353	O	ASN	B	224	80.968	60.387	50.275	1.00	12.99	O
ATOM	4354	CB	ASN	B	224	79.167	59.917	52.781	1.00	16.69	C
ATOM	4355	CG	ASN	B	224	77.938	59.330	53.427	1.00	14.29	C
ATOM	4356	OD1	ASN	B	224	76.808	59.567	53.104	1.00	16.54	O
ATOM	4357	ND2	ASN	B	224	78.142	58.414	54.402	1.00	14.31	N
ATOM	4358	N	PRO	B	225	80.259	62.388	51.020	1.00	16.23	N
ATOM	4359	CA	PRO	B	225	81.490	63.065	50.712	1.00	17.76	C
ATOM	4360	C	PRO	B	225	82.639	62.611	51.615	1.00	16.04	C
ATOM	4361	O	PRO	B	225	82.396	62.280	52.786	1.00	17.79	O
ATOM	4362	CB	PRO	B	225	81.199	64.571	50.986	1.00	17.09	C
ATOM	4363	CG	PRO	B	225	80.087	64.480	51.991	1.00	16.17	C
ATOM	4364	CD	PRO	B	225	79.300	63.187	51.788	1.00	16.78	C
ATOM	4365	N	TYR	B	226	83.849	62.647	51.095	1.00	18.45	N
ATOM	4366	CA	TYR	B	226	85.011	62.365	51.936	1.00	14.80	C
ATOM	4367	C	TYR	B	226	85.263	63.539	52.885	1.00	20.68	C
ATOM	4368	O	TYR	B	226	85.364	63.344	54.097	1.00	20.55	O
ATOM	4369	CB	TYR	B	226	86.262	62.121	51.102	1.00	15.96	C
ATOM	4370	CG	TYR	B	226	87.496	62.006	51.962	1.00	18.14	C
ATOM	4371	CD1	TYR	B	226	87.686	60.837	52.703	1.00	19.66	C
ATOM	4372	CD2	TYR	B	226	88.486	62.969	52.041	1.00	19.41	C
ATOM	4373	CE1	TYR	B	226	88.794	60.644	53.497	1.00	19.27	C
ATOM	4374	CE2	TYR	B	226	89.600	62.778	52.823	1.00	20.75	C
ATOM	4375	CZ	TYR	B	226	89.754	61.611	53.557	1.00	20.23	C
ATOM	4376	OH	TYR	B	226	90.889	61.455	54.340	1.00	24.36	O
ATOM	4377	N	SER	B	227	85.340	64.760	52.342	1.00	21.66	N
ATOM	4378	CA	SER	B	227	85.624	65.894	53.235	1.00	21.29	C
ATOM	4379	C	SER	B	227	84.835	67.105	52.729	1.00	23.86	C
ATOM	4380	O	SER	B	227	85.046	67.459	51.573	1.00	24.44	O
ATOM	4381	CB	SER	B	227	87.109	66.229	53.249	1.00	24.88	C
ATOM	4382	OG	SER	B	227	87.427	67.292	54.137	1.00	28.51	O
ATOM	4383	N	THR	B	228	84.001	67.611	53.596	1.00	19.81	N
ATOM	4384	CA	THR	B	228	83.268	68.825	53.158	1.00	21.93	C
ATOM	4385	C	THR	B	228	83.020	69.704	54.372	1.00	19.87	C
ATOM	4386	O	THR	B	228	82.687	69.251	55.472	1.00	23.64	O
ATOM	4387	CB	THR	B	228	81.950	68.501	52.450	1.00	22.85	C
ATOM	4388	OG1	THR	B	228	81.263	69.728	52.152	1.00	25.99	O
ATOM	4389	CG2	THR	B	228	81.049	67.657	53.327	1.00	25.62	C
ATOM	4390	N	SER	B	229	83.016	71.024	54.068	1.00	26.47	N
ATOM	4391	CA	SER	B	229	82.660	72.003	55.078	1.00	23.55	C
ATOM	4392	C	SER	B	229	81.166	72.317	54.991	1.00	27.25	C
ATOM	4393	O	SER	B	229	80.593	73.105	55.752	1.00	27.41	O
ATOM	4394	CB	SER	B	229	83.451	73.328	54.991	1.00	19.89	C
ATOM	4395	OG	SER	B	229	83.457	73.796	53.656	1.00	30.00	O
ATOM	4396	N	ASN	B	230	80.424	71.620	54.124	1.00	21.18	N
ATOM	4397	CA	ASN	B	230	78.979	71.814	54.004	1.00	24.17	C
ATOM	4398	C	ASN	B	230	78.234	70.508	53.842	1.00	22.40	C
ATOM	4399	O	ASN	B	230	77.512	70.266	52.879	1.00	24.08	O
ATOM	4400	CB	ASN	B	230	78.682	72.769	52.838	1.00	32.64	C
ATOM	4401	CG	ASN	B	230	77.230	73.165	52.652	1.00	38.99	C
ATOM	4402	OD1	ASN	B	230	76.521	73.432	53.622	1.00	36.44	O
ATOM	4403	ND2	ASN	B	230	76.748	73.186	51.407	1.00	38.74	N
ATOM	4404	N	PRO	B	231	78.252	69.665	54.873	1.00	20.53	N
ATOM	4405	CA	PRO	B	231	77.533	68.396	54.895	1.00	22.58	C
ATOM	4406	C	PRO	B	231	76.045	68.653	54.907	1.00	24.40	C
ATOM	4407	O	PRO	B	231	75.617	69.735	55.320	1.00	24.70	O
ATOM	4408	CB	PRO	B	231	77.988	67.687	56.190	1.00	25.34	C
ATOM	4409	CG	PRO	B	231	78.412	68.850	57.050	1.00	26.80	C
ATOM	4410	CD	PRO	B	231	78.998	69.904	56.124	1.00	25.68	C
ATOM	4411	N	PRO	B	232	75.205	67.751	54.415	1.00	23.71	N

ATOM	4412	CA	PRO	B	232	73.774	67.879	54.388	1.00	23.71	C
ATOM	4413	C	PRO	B	232	73.179	68.075	55.765	1.00	24.02	C
ATOM	4414	O	PRO	B	232	73.680	67.567	56.765	1.00	23.48	O
ATOM	4415	CB	PRO	B	232	73.219	66.522	53.894	1.00	23.88	C
ATOM	4416	CG	PRO	B	232	74.408	65.936	53.217	1.00	23.07	C
ATOM	4417	CD	PRO	B	232	75.674	66.457	53.871	1.00	30.70	C
ATOM	4418	N	PRO	B	233	72.056	68.760	55.886	1.00	24.16	N
ATOM	4419	CA	PRO	B	233	71.321	68.972	57.108	1.00	24.88	C
ATOM	4420	C	PRO	B	233	70.961	67.707	57.878	1.00	27.28	C
ATOM	4421	O	PRO	B	233	70.979	67.711	59.117	1.00	28.43	O
ATOM	4422	CB	PRO	B	233	69.984	69.661	56.725	1.00	30.23	C
ATOM	4423	CG	PRO	B	233	70.404	70.326	55.438	1.00	32.57	C
ATOM	4424	CD	PRO	B	233	71.387	69.395	54.737	1.00	30.54	C
ATOM	4425	N	TYR	B	234	70.697	66.594	57.179	1.00	23.72	N
ATOM	4426	CA	TYR	B	234	70.395	65.334	57.851	1.00	27.99	C
ATOM	4427	C	TYR	B	234	71.568	64.812	58.678	1.00	25.78	C
ATOM	4428	O	TYR	B	234	71.374	63.870	59.463	1.00	27.46	O
ATOM	4429	CB	TYR	B	234	69.874	64.270	56.897	1.00	25.83	C
ATOM	4430	CG	TYR	B	234	70.776	63.812	55.785	1.00	25.15	C
ATOM	4431	CD1	TYR	B	234	72.057	63.297	56.036	1.00	22.25	C
ATOM	4432	CD2	TYR	B	234	70.371	63.873	54.468	1.00	23.87	C
ATOM	4433	CE1	TYR	B	234	72.889	62.901	55.007	1.00	20.62	C
ATOM	4434	CE2	TYR	B	234	71.199	63.467	53.433	1.00	21.14	C
ATOM	4435	CZ	TYR	B	234	72.452	62.975	53.711	1.00	20.43	C
ATOM	4436	OH	TYR	B	234	73.262	62.582	52.670	1.00	23.64	O
ATOM	4437	N	THR	B	235	72.775	65.352	58.557	1.00	21.65	N
ATOM	4438	CA	THR	B	235	73.920	64.952	59.351	1.00	21.99	C
ATOM	4439	C	THR	B	235	74.004	65.716	60.676	1.00	22.96	C
ATOM	4440	O	THR	B	235	74.986	65.634	61.416	1.00	22.87	O
ATOM	4441	CB	THR	B	235	75.263	65.175	58.626	1.00	21.87	C
ATOM	4442	OG1	THR	B	235	75.544	66.580	58.504	1.00	20.86	O
ATOM	4443	CG2	THR	B	235	75.228	64.555	57.228	1.00	19.21	C
ATOM	4444	N	SER	B	236	73.049	66.606	60.865	1.00	27.15	N
ATOM	4445	CA	SER	B	236	72.966	67.439	62.047	1.00	31.54	C
ATOM	4446	C	SER	B	236	72.893	66.519	63.264	1.00	29.28	C
ATOM	4447	O	SER	B	236	72.138	65.550	63.292	1.00	33.89	O
ATOM	4448	CB	SER	B	236	71.772	68.383	61.977	1.00	38.83	C
ATOM	4449	OG	SER	B	236	71.692	69.151	63.159	1.00	38.58	O
ATOM	4450	N	GLY	B	237	73.763	66.820	64.220	1.00	30.14	N
ATOM	4451	CA	GLY	B	237	73.809	66.005	65.433	1.00	32.92	C
ATOM	4452	C	GLY	B	237	74.818	64.872	65.317	1.00	34.16	C
ATOM	4453	O	GLY	B	237	75.027	64.190	66.327	1.00	34.16	O
ATOM	4454	N	SER	B	238	75.426	64.651	64.143	1.00	24.81	N
ATOM	4455	CA	SER	B	238	76.369	63.523	64.099	1.00	20.48	C
ATOM	4456	C	SER	B	238	77.777	64.047	64.173	1.00	20.06	C
ATOM	4457	O	SER	B	238	78.173	64.990	63.476	1.00	24.23	O
ATOM	4458	CB	SER	B	238	76.187	62.748	62.775	1.00	28.36	C
ATOM	4459	OG	SER	B	238	77.364	61.974	62.545	1.00	24.23	O
ATOM	4460	N	PRO	B	239	78.666	63.363	64.886	1.00	20.04	N
ATOM	4461	CA	PRO	B	239	80.078	63.684	64.921	1.00	23.84	C
ATOM	4462	C	PRO	B	239	80.830	63.214	63.691	1.00	23.75	C
ATOM	4463	O	PRO	B	239	81.982	63.560	63.409	1.00	23.78	O
ATOM	4464	CB	PRO	B	239	80.626	62.959	66.178	1.00	24.80	C
ATOM	4465	CG	PRO	B	239	79.732	61.744	66.157	1.00	17.59	C
ATOM	4466	CD	PRO	B	239	78.345	62.201	65.711	1.00	24.29	C
ATOM	4467	N	SER	B	240	80.168	62.455	62.816	1.00	20.96	N
ATOM	4468	CA	SER	B	240	80.710	61.906	61.586	1.00	23.28	C
ATOM	4469	C	SER	B	240	79.992	62.332	60.325	1.00	22.01	C
ATOM	4470	O	SER	B	240	79.560	61.499	59.498	1.00	17.70	O

ATOM	4471	CB	SER	B	240	80.544	60.356	61.687	1.00	19.75	C
ATOM	4472	OG	SER	B	240	81.166	59.827	62.845	1.00	18.91	O
ATOM	4473	N	PRO	B	241	79.895	63.621	60.066	1.00	19.53	N
ATOM	4474	CA	PRO	B	241	79.162	64.146	58.921	1.00	20.71	C
ATOM	4475	C	PRO	B	241	79.806	64.007	57.558	1.00	20.64	C
ATOM	4476	O	PRO	B	241	79.147	64.301	56.551	1.00	22.07	O
ATOM	4477	CB	PRO	B	241	78.831	65.606	59.294	1.00	19.91	C
ATOM	4478	CG	PRO	B	241	80.113	65.964	60.019	1.00	19.53	C
ATOM	4479	CD	PRO	B	241	80.376	64.736	60.887	1.00	19.55	C
ATOM	4480	N	ASP	B	242	81.048	63.584	57.490	1.00	18.48	N
ATOM	4481	CA	ASP	B	242	81.722	63.229	56.263	1.00	17.92	C
ATOM	4482	C	ASP	B	242	82.564	61.990	56.594	1.00	18.21	C
ATOM	4483	O	ASP	B	242	82.681	61.686	57.792	1.00	17.57	O
ATOM	4484	CB	ASP	B	242	82.558	64.303	55.593	1.00	20.52	C
ATOM	4485	CG	ASP	B	242	83.556	65.012	56.472	1.00	27.92	C
ATOM	4486	OD1	ASP	B	242	84.037	64.411	57.455	1.00	20.00	O
ATOM	4487	OD2	ASP	B	242	83.877	66.193	56.178	1.00	22.02	O
ATOM	4488	N	GLU	B	243	83.020	61.312	55.564	1.00	18.13	N
ATOM	4489	CA	GLU	B	243	83.793	60.089	55.816	1.00	13.20	C
ATOM	4490	C	GLU	B	243	85.141	60.306	56.431	1.00	21.87	C
ATOM	4491	O	GLU	B	243	85.600	59.439	57.192	1.00	18.81	O
ATOM	4492	CB	GLU	B	243	83.824	59.242	54.533	1.00	17.00	C
ATOM	4493	CG	GLU	B	243	82.417	58.789	54.159	1.00	16.21	C
ATOM	4494	CD	GLU	B	243	81.840	57.737	55.108	1.00	19.62	C
ATOM	4495	OE1	GLU	B	243	82.484	56.677	55.223	1.00	18.36	O
ATOM	4496	OE2	GLU	B	243	80.797	57.993	55.701	1.00	15.08	O
ATOM	4497	N	SER	B	244	85.841	61.433	56.247	1.00	16.18	N
ATOM	4498	CA	SER	B	244	87.140	61.627	56.880	1.00	20.14	C
ATOM	4499	C	SER	B	244	86.919	61.676	58.392	1.00	21.14	C
ATOM	4500	O	SER	B	244	87.711	61.092	59.135	1.00	18.74	O
ATOM	4501	CB	SER	B	244	87.780	62.927	56.410	1.00	21.94	C
ATOM	4502	OG	SER	B	244	88.857	63.321	57.246	1.00	22.91	O
ATOM	4503	N	ARG	B	245	85.857	62.334	58.815	1.00	21.95	N
ATOM	4504	CA	ARG	B	245	85.576	62.480	60.229	1.00	24.46	C
ATOM	4505	C	ARG	B	245	85.093	61.160	60.826	1.00	25.03	C
ATOM	4506	O	ARG	B	245	85.457	60.863	61.970	1.00	22.74	O
ATOM	4507	CB	ARG	B	245	84.607	63.628	60.522	1.00	22.43	C
ATOM	4508	CG	ARG	B	245	85.326	65.003	60.416	1.00	20.04	C
ATOM	4509	CD	ARG	B	245	84.286	66.080	60.770	1.00	23.38	C
ATOM	4510	NE	ARG	B	245	83.742	66.531	59.487	1.00	25.92	N
ATOM	4511	CZ	ARG	B	245	83.046	67.651	59.310	1.00	31.16	C
ATOM	4512	NH1	ARG	B	245	82.755	68.449	60.324	1.00	27.40	N
ATOM	4513	NH2	ARG	B	245	82.611	67.940	58.082	1.00	20.28	N
ATOM	4514	N	TYR	B	246	84.326	60.401	60.034	1.00	21.70	N
ATOM	4515	CA	TYR	B	246	83.846	59.101	60.505	1.00	21.93	C
ATOM	4516	C	TYR	B	246	85.045	58.214	60.834	1.00	22.04	C
ATOM	4517	O	TYR	B	246	85.134	57.627	61.913	1.00	17.94	O
ATOM	4518	CB	TYR	B	246	82.952	58.421	59.464	1.00	20.67	C
ATOM	4519	CG	TYR	B	246	82.500	57.013	59.837	1.00	17.47	C
ATOM	4520	CD1	TYR	B	246	82.012	56.711	61.087	1.00	16.32	C
ATOM	4521	CD2	TYR	B	246	82.590	56.036	58.862	1.00	13.90	C
ATOM	4522	CE1	TYR	B	246	81.592	55.408	61.386	1.00	16.81	C
ATOM	4523	CE2	TYR	B	246	82.191	54.734	59.143	1.00	16.56	C
ATOM	4524	CZ	TYR	B	246	81.735	54.446	60.413	1.00	20.55	C
ATOM	4525	OH	TYR	B	246	81.362	53.141	60.701	1.00	15.95	O
ATOM	4526	N	ALA	B	247	85.995	58.146	59.929	1.00	18.03	N
ATOM	4527	CA	ALA	B	247	87.244	57.423	60.003	1.00	20.86	C
ATOM	4528	C	ALA	B	247	87.991	57.842	61.276	1.00	20.26	C
ATOM	4529	O	ALA	B	247	88.391	57.011	62.071	1.00	21.88	O

ATOM	4530	CB	ALA	B	247	88.147	57.635	58.805	1.00	19.65	C
ATOM	4531	N	THR	B	248	88.113	59.154	61.499	1.00	21.15	N
ATOM	4532	CA	THR	B	248	88.812	59.566	62.735	1.00	21.86	C
ATOM	4533	C	THR	B	248	88.071	59.138	63.978	1.00	18.72	C
ATOM	4534	O	THR	B	248	88.707	58.749	64.973	1.00	22.28	O
ATOM	4535	CB	THR	B	248	88.987	61.098	62.679	1.00	16.96	C
ATOM	4536	OG1	THR	B	248	89.909	61.383	61.646	1.00	20.38	O
ATOM	4537	CG2	THR	B	248	89.525	61.609	64.019	1.00	21.61	C
ATOM	4538	N	ASN	B	249	86.757	59.205	64.008	1.00	16.99	N
ATOM	4539	CA	ASN	B	249	85.951	58.832	65.160	1.00	18.48	C
ATOM	4540	C	ASN	B	249	86.076	57.327	65.390	1.00	22.24	C
ATOM	4541	O	ASN	B	249	86.310	56.931	66.529	1.00	18.80	O
ATOM	4542	CB	ASN	B	249	84.503	59.259	64.948	1.00	24.07	C
ATOM	4543	CG	ASN	B	249	84.429	60.787	64.892	1.00	23.08	C
ATOM	4544	OD1	ASN	B	249	85.320	61.484	65.353	1.00	23.66	O
ATOM	4545	ND2	ASN	B	249	83.297	61.244	64.379	1.00	19.45	N
ATOM	4546	N	ILE	B	250	85.997	56.509	64.341	1.00	20.93	N
ATOM	4547	CA	ILE	B	250	86.164	55.064	64.633	1.00	17.50	C
ATOM	4548	C	ILE	B	250	87.566	54.751	65.123	1.00	18.42	C
ATOM	4549	O	ILE	B	250	87.767	53.941	66.061	1.00	23.75	O
ATOM	4550	CB	ILE	B	250	85.780	54.209	63.421	1.00	15.48	C
ATOM	4551	CG1	ILE	B	250	84.274	54.216	63.241	1.00	17.22	C
ATOM	4552	CG2	ILE	B	250	86.322	52.783	63.614	1.00	13.80	C
ATOM	4553	CD1	ILE	B	250	83.405	53.287	64.039	1.00	18.66	C
ATOM	4554	N	ALA	B	251	88.598	55.345	64.535	1.00	17.26	N
ATOM	4555	CA	ALA	B	251	89.988	55.092	64.920	1.00	18.33	C
ATOM	4556	C	ALA	B	251	90.157	55.460	66.394	1.00	19.88	C
ATOM	4557	O	ALA	B	251	90.787	54.730	67.157	1.00	18.65	O
ATOM	4558	CB	ALA	B	251	90.939	55.868	64.042	1.00	17.72	C
ATOM	4559	N	ASN	B	252	89.572	56.591	66.785	1.00	18.07	N
ATOM	4560	CA	ASN	B	252	89.623	56.975	68.203	1.00	17.37	C
ATOM	4561	C	ASN	B	252	89.035	55.876	69.094	1.00	23.95	C
ATOM	4562	O	ASN	B	252	89.667	55.562	70.105	1.00	21.93	O
ATOM	4563	CB	ASN	B	252	88.926	58.310	68.433	1.00	21.38	C
ATOM	4564	CG	ASN	B	252	89.731	59.490	67.902	1.00	24.79	C
ATOM	4565	OD1	ASN	B	252	90.894	59.386	67.516	1.00	23.42	O
ATOM	4566	ND2	ASN	B	252	89.081	60.663	67.888	1.00	23.22	N
ATOM	4567	N	ALA	B	253	87.873	55.317	68.780	1.00	18.25	N
ATOM	4568	CA	ALA	B	253	87.318	54.232	69.622	1.00	20.03	C
ATOM	4569	C	ALA	B	253	88.192	52.998	69.551	1.00	22.96	C
ATOM	4570	O	ALA	B	253	88.501	52.365	70.570	1.00	22.86	O
ATOM	4571	CB	ALA	B	253	85.934	53.901	69.054	1.00	20.69	C
ATOM	4572	N	MET	B	254	88.698	52.639	68.358	1.00	15.53	N
ATOM	4573	CA	MET	B	254	89.563	51.497	68.183	1.00	18.63	C
ATOM	4574	C	MET	B	254	90.884	51.601	68.934	1.00	25.70	C
ATOM	4575	O	MET	B	254	91.377	50.658	69.568	1.00	18.30	O
ATOM	4576	CB	MET	B	254	89.891	51.236	66.688	1.00	17.39	C
ATOM	4577	CG	MET	B	254	88.669	51.001	65.833	1.00	18.39	C
ATOM	4578	SD	MET	B	254	87.924	49.373	66.273	1.00	17.66	S
ATOM	4579	CE	MET	B	254	86.459	49.553	65.268	1.00	20.05	C
ATOM	4580	N	ARG	B	255	91.460	52.806	68.953	1.00	17.46	N
ATOM	4581	CA	ARG	B	255	92.758	52.993	69.624	1.00	17.68	C
ATOM	4582	C	ARG	B	255	92.716	52.734	71.115	1.00	16.19	C
ATOM	4583	O	ARG	B	255	93.642	52.099	71.652	1.00	20.59	O
ATOM	4584	CB	ARG	B	255	93.236	54.416	69.294	1.00	20.26	C
ATOM	4585	CG	ARG	B	255	94.571	54.756	69.920	1.00	22.42	C
ATOM	4586	CD	ARG	B	255	95.046	56.177	69.563	1.00	18.77	C
ATOM	4587	NE	ARG	B	255	94.961	56.385	68.122	1.00	22.61	N
ATOM	4588	CZ	ARG	B	255	94.034	57.163	67.563	1.00	19.19	C

	ATOM	4589	NH1	ARG	B	255	93.114	57.776	68.290	1.00 24.62	N
	ATOM	4590	NH2	ARG	B	255	94.000	57.265	66.235	1.00 22.17	N
	ATOM	4591	N	GLN	B	256	91.609	53.085	71.747	1.00 19.29	N
	ATOM	4592	CA	GLN	B	256	91.386	52.922	73.171	1.00 20.77	C
5	ATOM	4593	C	GLN	B	256	91.249	51.452	73.561	1.00 27.72	C
	ATOM	4594	O	GLN	B	256	91.450	51.090	74.721	1.00 28.03	O
	ATOM	4595	CB	GLN	B	256	90.108	53.645	73.572	1.00 23.65	C
	ATOM	4596	CG	GLN	B	256	90.199	55.157	73.583	1.00 25.96	C
	ATOM	4597	CD	GLN	B	256	88.817	55.719	73.918	1.00 29.96	C
10	ATOM	4598	OE1	GLN	B	256	88.445	55.660	75.100	1.00 28.44	O
	ATOM	4599	NE2	GLN	B	256	88.148	56.199	72.894	1.00 33.23	N
	ATOM	4600	N	ARG	B	257	90.881	50.620	72.582	1.00 22.52	N
	ATOM	4601	CA	ARG	B	257	90.759	49.192	72.787	1.00 18.53	C
	ATOM	4602	C	ARG	B	257	91.938	48.414	72.222	1.00 25.19	C
15	ATOM	4603	O	ARG	B	257	91.978	47.169	72.260	1.00 25.60	O
	ATOM	4604	CB	ARG	B	257	89.434	48.704	72.155	1.00 15.54	C
	ATOM	4605	CG	ARG	B	257	88.158	49.344	72.603	1.00 21.95	C
	ATOM	4606	CD	ARG	B	257	86.940	48.932	71.771	1.00 21.22	C
	ATOM	4607	NE	ARG	B	257	85.701	49.434	72.374	1.00 21.40	N
20	ATOM	4608	CZ	ARG	B	257	84.770	48.681	72.962	1.00 17.04	C
	ATOM	4609	NH1	ARG	B	257	84.937	47.355	73.034	1.00 18.04	N
	ATOM	4610	NH2	ARG	B	257	83.688	49.216	73.464	1.00 20.59	N
	ATOM	4611	N	GLY	B	258	92.970	49.052	71.671	1.00 18.10	N
	ATOM	4612	CA	GLY	B	258	94.132	48.442	71.124	1.00 18.57	C
25	ATOM	4613	C	GLY	B	258	93.982	47.778	69.767	1.00 25.57	C
	ATOM	4614	O	GLY	B	258	94.725	46.876	69.383	1.00 23.23	O
	ATOM	4615	N	LEU	B	259	92.983	48.247	69.022	1.00 21.02	N
	ATOM	4616	CA	LEU	B	259	92.663	47.659	67.714	1.00 20.21	C
	ATOM	4617	C	LEU	B	259	93.165	48.547	66.601	1.00 23.47	C
30	ATOM	4618	O	LEU	B	259	93.520	49.710	66.835	1.00 22.18	O
	ATOM	4619	CB	LEU	B	259	91.131	47.552	67.707	1.00 17.78	C
	ATOM	4620	CG	LEU	B	259	90.521	46.633	68.776	1.00 24.62	C
	ATOM	4621	CD1	LEU	B	259	89.009	46.719	68.792	1.00 23.42	C
	ATOM	4622	CD2	LEU	B	259	90.994	45.203	68.523	1.00 29.45	C
35	ATOM	4623	N	PRO	B	260	93.130	48.065	65.382	1.00 20.15	N
	ATOM	4624	CA	PRO	B	260	93.529	48.786	64.187	1.00 20.61	C
	ATOM	4625	C	PRO	B	260	92.744	50.082	64.006	1.00 18.29	C
	ATOM	4626	O	PRO	B	260	91.636	50.251	64.507	1.00 20.65	O
	ATOM	4627	CB	PRO	B	260	93.341	47.801	63.018	1.00 20.96	C
40	ATOM	4628	CG	PRO	B	260	93.530	46.497	63.777	1.00 20.35	C
	ATOM	4629	CD	PRO	B	260	92.747	46.669	65.064	1.00 18.86	C
	ATOM	4630	N	THR	B	261	93.364	51.040	63.322	1.00 20.56	N
	ATOM	4631	CA	THR	B	261	92.777	52.370	63.164	1.00 22.31	C
	ATOM	4632	C	THR	B	261	92.637	52.857	61.724	1.00 29.16	C
45	ATOM	4633	O	THR	B	261	92.116	53.964	61.491	1.00 26.56	O
	ATOM	4634	CB	THR	B	261	93.773	53.376	63.826	1.00 22.09	C
	ATOM	4635	OG1	THR	B	261	95.056	53.131	63.247	1.00 22.50	O
	ATOM	4636	CG2	THR	B	261	93.768	53.250	65.336	1.00 21.07	C
	ATOM	4637	N	GLN	B	262	93.150	52.131	60.751	1.00 17.49	N
50	ATOM	4638	CA	GLN	B	262	93.230	52.631	59.381	1.00 22.49	C
	ATOM	4639	C	GLN	B	262	92.056	52.337	58.467	1.00 26.06	C
	ATOM	4640	O	GLN	B	262	91.470	51.253	58.480	1.00 23.98	O
	ATOM	4641	CB	GLN	B	262	94.514	52.097	58.745	1.00 17.85	C
	ATOM	4642	CG	GLN	B	262	95.809	52.399	59.496	1.00 23.30	C
55	ATOM	4643	CD	GLN	B	262	95.927	53.919	59.725	1.00 18.41	C
	ATOM	4644	OE1	GLN	B	262	95.747	54.378	60.837	1.00 21.83	O
	ATOM	4645	NE2	GLN	B	262	96.207	54.610	58.633	1.00 24.59	N
	ATOM	4646	N	PHE	B	263	91.705	53.324	57.616	1.00 19.57	N
	ATOM	4647	CA	PHE	B	263	90.609	53.162	56.688	1.00 20.56	C

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ATOM   4648  C   PHE B 263      91.016  53.271  55.222  1.00 19.01           C
ATOM   4649  O   PHE B 263      91.971  53.925  54.796  1.00 17.87           O
ATOM   4650  CB  PHE B 263      89.606  54.332  56.900  1.00 13.96           C
ATOM   4651  CG  PHE B 263      88.624  54.096  57.976  1.00 13.70           C
ATOM   4652  CD1 PHE B 263      89.001  54.066  59.317  1.00 18.13           C
ATOM   4653  CD2 PHE B 263      87.278  53.888  57.681  1.00 16.32           C
ATOM   4654  CE1 PHE B 263      88.063  53.857  60.308  1.00 15.53           C
ATOM   4655  CE2 PHE B 263      86.339  53.631  58.665  1.00 22.27           C
ATOM   4656  CZ  PHE B 263      86.738  53.620  60.009  1.00 17.15           C
ATOM   4657  N   ILE B 264      90.154  52.689  54.389  1.00 16.44           N
ATOM   4658  CA  ILE B 264      90.078  52.972  52.963  1.00 14.67           C
ATOM   4659  C   ILE B 264      88.632  53.444  52.759  1.00 18.83           C
ATOM   4660  O   ILE B 264      87.694  52.963  53.392  1.00 15.16           O
ATOM   4661  CB  ILE B 264      90.502  51.924  51.960  1.00 17.36           C
ATOM   4662  CG1 ILE B 264      89.801  50.578  52.219  1.00 12.42           C
ATOM   4663  CG2 ILE B 264      92.023  51.758  51.922  1.00 16.92           C
ATOM   4664  CD1 ILE B 264      90.167  49.471  51.282  1.00 21.20           C
ATOM   4665  N   ILE B 265      88.431  54.530  52.024  1.00 13.66           N
ATOM   4666  CA  ILE B 265      87.103  55.132  51.874  1.00 14.44           C
ATOM   4667  C   ILE B 265      86.702  55.132  50.415  1.00 16.12           C
ATOM   4668  O   ILE B 265      87.430  55.579  49.531  1.00 14.22           O
ATOM   4669  CB  ILE B 265      87.030  56.546  52.499  1.00 16.36           C
ATOM   4670  CG1 ILE B 265      87.156  56.412  54.028  1.00 17.93           C
ATOM   4671  CG2 ILE B 265      85.671  57.178  52.177  1.00 11.34           C
ATOM   4672  CD1 ILE B 265      87.527  57.706  54.719  1.00 32.91           C
ATOM   4673  N   ASP B 266      85.496  54.580  50.125  1.00 14.62           N
ATOM   4674  CA  ASP B 266      85.067  54.528  48.738  1.00 12.31           C
ATOM   4675  C   ASP B 266      84.567  55.926  48.329  1.00 15.66           C
ATOM   4676  O   ASP B 266      83.870  56.550  49.118  1.00 14.39           O
ATOM   4677  CB  ASP B 266      83.853  53.587  48.624  1.00 13.98           C
ATOM   4678  CG  ASP B 266      83.447  53.191  47.228  1.00 12.35           C
ATOM   4679  OD1 ASP B 266      84.072  53.622  46.233  1.00 12.31           O
ATOM   4680  OD2 ASP B 266      82.482  52.385  47.141  1.00 12.07           O
ATOM   4681  N   GLN B 267      84.963  56.354  47.130  1.00 13.29           N
ATOM   4682  CA  GLN B 267      84.397  57.580  46.562  1.00 12.36           C
ATOM   4683  C   GLN B 267      83.959  57.320  45.136  1.00 16.31           C
ATOM   4684  O   GLN B 267      83.874  58.239  44.299  1.00 13.76           O
ATOM   4685  CB  GLN B 267      85.318  58.792  46.591  1.00 11.72           C
ATOM   4686  CG  GLN B 267      85.624  59.350  47.970  1.00 16.66           C
ATOM   4687  CD  GLN B 267      84.495  60.168  48.541  1.00 17.67           C
ATOM   4688  OE1 GLN B 267      84.362  61.389  48.308  1.00 18.52           O
ATOM   4689  NE2 GLN B 267      83.667  59.527  49.367  1.00 16.26           N
ATOM   4690  N   SER B 268      83.606  56.064  44.794  1.00 12.12           N
ATOM   4691  CA  SER B 268      83.135  55.714  43.472  1.00 13.53           C
ATOM   4692  C   SER B 268      81.933  56.564  43.051  1.00 13.38           C
ATOM   4693  O   SER B 268      81.773  56.916  41.897  1.00 12.66           O
ATOM   4694  CB  SER B 268      82.677  54.246  43.416  1.00 12.82           C
ATOM   4695  OG  SER B 268      81.788  54.024  44.520  1.00 13.85           O
ATOM   4696  N   ARG B 269      81.035  56.843  43.976  1.00 14.34           N
ATOM   4697  CA  ARG B 269      79.865  57.678  43.732  1.00 12.27           C
ATOM   4698  C   ARG B 269      79.701  58.680  44.863  1.00 13.37           C
ATOM   4699  O   ARG B 269      79.838  58.316  46.041  1.00 15.59           O
ATOM   4700  CB  ARG B 269      78.577  56.826  43.677  1.00 12.81           C
ATOM   4701  CG  ARG B 269      78.638  55.757  42.577  1.00 13.14           C
ATOM   4702  CD  ARG B 269      77.348  54.948  42.459  1.00 14.78           C
ATOM   4703  NE  ARG B 269      77.138  54.162  43.692  1.00 13.58           N
ATOM   4704  CZ  ARG B 269      76.098  53.362  43.885  1.00 15.13           C
ATOM   4705  NH1 ARG B 269      75.239  53.220  42.872  1.00 13.64           N
ATOM   4706  NH2 ARG B 269      75.941  52.716  45.055  1.00 14.12           N
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ATOM   4707  N   VAL B 270      79.450  59.965  44.572  1.00 11.08           N
ATOM   4708  CA  VAL B 270      79.220  60.960  45.622  1.00 15.78           C
ATOM   4709  C   VAL B 270      77.922  61.683  45.289  1.00 14.22           C
ATOM   4710  O   VAL B 270      77.683  62.069  44.123  1.00 14.63           O
ATOM   4711  CB  VAL B 270      80.396  61.948  45.739  1.00 15.78           C
ATOM   4712  CG1 VAL B 270      80.112  63.059  46.732  1.00 17.62           C
ATOM   4713  CG2 VAL B 270      81.698  61.216  46.150  1.00 16.79           C
ATOM   4714  N   ALA B 271      76.995  61.815  46.225  1.00 13.05           N
ATOM   4715  CA  ALA B 271      75.731  62.478  45.926  1.00 12.38           C
ATOM   4716  C   ALA B 271      75.874  63.987  45.850  1.00 17.18           C
ATOM   4717  O   ALA B 271      76.680  64.586  46.587  1.00 20.63           O
ATOM   4718  CB  ALA B 271      74.769  62.156  47.096  1.00 13.94           C
ATOM   4719  N   LEU B 272      75.065  64.598  44.958  1.00 16.98           N
ATOM   4720  CA  LEU B 272      75.024  66.072  44.969  1.00 24.18           C
ATOM   4721  C   LEU B 272      74.209  66.579  46.151  1.00 23.47           C
ATOM   4722  O   LEU B 272      73.377  65.881  46.759  1.00 24.74           O
ATOM   4723  CB  LEU B 272      74.379  66.603  43.680  1.00 21.83           C
ATOM   4724  CG  LEU B 272      74.884  66.139  42.328  1.00 31.92           C
ATOM   4725  CD1 LEU B 272      74.547  67.178  41.245  1.00 24.20           C
ATOM   4726  CD2 LEU B 272      76.376  65.868  42.313  1.00 30.13           C
ATOM   4727  N   SER B 273      74.464  67.830  46.586  1.00 29.62           N
ATOM   4728  CA  SER B 273      73.681  68.382  47.696  1.00 32.76           C
ATOM   4729  C   SER B 273      72.195  68.333  47.341  1.00 27.46           C
ATOM   4730  O   SER B 273      71.805  68.780  46.260  1.00 27.26           O
ATOM   4731  CB  SER B 273      74.033  69.813  48.083  1.00 36.21           C
ATOM   4732  OG  SER B 273      75.439  69.961  48.150  1.00 40.72           O
ATOM   4733  N   GLY B 274      71.409  67.858  48.288  1.00 26.91           N
ATOM   4734  CA  GLY B 274      69.990  67.671  48.146  1.00 25.28           C
ATOM   4735  C   GLY B 274      69.530  66.376  47.545  1.00 25.72           C
ATOM   4736  O   GLY B 274      68.312  66.199  47.480  1.00 31.28           O
ATOM   4737  N   ALA B 275      70.374  65.443  47.085  1.00 19.25           N
ATOM   4738  CA  ALA B 275      69.891  64.234  46.418  1.00 20.46           C
ATOM   4739  C   ALA B 275      69.075  63.304  47.297  1.00 22.81           C
ATOM   4740  O   ALA B 275      68.142  62.608  46.889  1.00 23.98           O
ATOM   4741  CB  ALA B 275      71.080  63.488  45.811  1.00 22.82           C
ATOM   4742  N   ARG B 276      69.503  63.229  48.572  1.00 24.55           N
ATOM   4743  CA  ARG B 276      68.787  62.401  49.533  1.00 21.37           C
ATOM   4744  C   ARG B 276      68.081  63.258  50.581  1.00 16.59           C
ATOM   4745  O   ARG B 276      68.673  64.155  51.190  1.00 21.69           O
ATOM   4746  CB  ARG B 276      69.768  61.504  50.338  1.00 17.11           C
ATOM   4747  CG  ARG B 276      70.402  60.465  49.439  1.00 17.37           C
ATOM   4748  CD  ARG B 276      71.283  59.517  50.245  1.00 18.12           C
ATOM   4749  NE  ARG B 276      72.595  60.136  50.504  1.00 22.72           N
ATOM   4750  CZ  ARG B 276      73.613  59.419  51.016  1.00 22.19           C
ATOM   4751  NH1 ARG B 276      73.350  58.151  51.305  1.00 20.30           N
ATOM   4752  NH2 ARG B 276      74.781  59.988  51.209  1.00 20.97           N
ATOM   4753  N   SER B 277      66.841  62.835  50.883  1.00 18.66           N
ATOM   4754  CA  SER B 277      66.154  63.554  51.962  1.00 22.06           C
ATOM   4755  C   SER B 277      66.502  62.870  53.289  1.00 28.16           C
ATOM   4756  O   SER B 277      66.397  63.504  54.335  1.00 31.85           O
ATOM   4757  CB  SER B 277      64.643  63.547  51.741  1.00 34.95           C
ATOM   4758  OG  SER B 277      64.206  62.271  51.329  1.00 36.51           O
ATOM   4759  N   GLU B 278      66.827  61.575  53.217  1.00 21.65           N
ATOM   4760  CA  GLU B 278      67.207  60.828  54.415  1.00 25.67           C
ATOM   4761  C   GLU B 278      68.593  60.195  54.195  1.00 20.70           C
ATOM   4762  O   GLU B 278      68.900  59.690  53.109  1.00 20.38           O
ATOM   4763  CB  GLU B 278      66.175  59.758  54.763  1.00 24.88           C
ATOM   4764  CG  GLU B 278      64.889  60.288  55.393  1.00 39.32           C
ATOM   4765  CD  GLU B 278      63.837  59.185  55.355  1.00 49.61           C
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ATOM   4766  OE1 GLU B 278      63.547  58.733  54.226  1.00 52.41           O
ATOM   4767  OE2 GLU B 278      63.335  58.777  56.419  1.00 60.57           O
ATOM   4768  N   TRP B 279      69.376  60.134  55.266  1.00 18.34           N
ATOM   4769  CA  TRP B 279      70.739  59.628  55.170  1.00 17.14           C
ATOM   4770  C   TRP B 279      70.786  58.146  54.779  1.00 18.27           C
ATOM   4771  O   TRP B 279      71.724  57.717  54.116  1.00 21.89           O
ATOM   4772  CB  TRP B 279      71.519  59.831  56.465  1.00 20.35           C
ATOM   4773  CG  TRP B 279      73.009  59.958  56.306  1.00 22.96           C
ATOM   4774  CD1 TRP B 279      73.797  59.680  55.225  1.00 17.88           C
ATOM   4775  CD2 TRP B 279      73.894  60.447  57.314  1.00 17.12           C
ATOM   4776  NE1 TRP B 279      75.100  59.932  55.515  1.00 17.15           N
ATOM   4777  CE2 TRP B 279      75.208  60.429  56.797  1.00 19.55           C
ATOM   4778  CE3 TRP B 279      73.713  60.838  58.654  1.00 15.78           C
ATOM   4779  CZ2 TRP B 279      76.330  60.794  57.534  1.00 16.75           C
ATOM   4780  CZ3 TRP B 279      74.810  61.250  59.361  1.00 20.70           C
ATOM   4781  CH2 TRP B 279      76.099  61.231  58.827  1.00 14.86           C
ATOM   4782  N   GLY B 280      69.777  57.387  55.211  1.00 21.03           N
ATOM   4783  CA  GLY B 280      69.756  55.964  54.906  1.00 20.84           C
ATOM   4784  C   GLY B 280      69.462  55.576  53.469  1.00 25.19           C
ATOM   4785  O   GLY B 280      69.573  54.374  53.175  1.00 21.44           O
ATOM   4786  N   GLN B 281      69.059  56.510  52.617  1.00 22.17           N
ATOM   4787  CA  GLN B 281      68.731  56.154  51.229  1.00 18.91           C
ATOM   4788  C   GLN B 281      70.001  55.609  50.570  1.00 19.28           C
ATOM   4789  O   GLN B 281      71.078  56.147  50.744  1.00 17.79           O
ATOM   4790  CB  GLN B 281      68.184  57.375  50.504  1.00 23.41           C
ATOM   4791  CG  GLN B 281      66.691  57.638  50.745  1.00 29.18           C
ATOM   4792  CD  GLN B 281      66.288  58.876  49.952  1.00 43.17           C
ATOM   4793  OE1 GLN B 281      66.607  58.938  48.756  1.00 46.46           O
ATOM   4794  NE2 GLN B 281      65.625  59.831  50.578  1.00 48.62           N
ATOM   4795  N   TRP B 282      69.846  54.485  49.872  1.00 17.84           N
ATOM   4796  CA  TRP B 282      71.024  53.830  49.288  1.00 15.47           C
ATOM   4797  C   TRP B 282      70.895  53.356  47.865  1.00 13.97           C
ATOM   4798  O   TRP B 282      71.961  53.156  47.234  1.00 14.89           O
ATOM   4799  CB  TRP B 282      71.378  52.597  50.171  1.00 15.87           C
ATOM   4800  CG  TRP B 282      70.260  51.623  50.330  1.00 17.68           C
ATOM   4801  CD1 TRP B 282      69.266  51.681  51.270  1.00 19.19           C
ATOM   4802  CD2 TRP B 282      69.985  50.470  49.520  1.00 16.68           C
ATOM   4803  NE1 TRP B 282      68.410  50.595  51.107  1.00 21.00           N
ATOM   4804  CE2 TRP B 282      68.828  49.858  50.032  1.00 23.86           C
ATOM   4805  CE3 TRP B 282      70.612  49.905  48.404  1.00 16.62           C
ATOM   4806  CZ2 TRP B 282      68.266  48.700  49.482  1.00 18.80           C
ATOM   4807  CZ3 TRP B 282      70.060  48.758  47.860  1.00 19.39           C
ATOM   4808  CH2 TRP B 282      68.921  48.166  48.400  1.00 20.13           C
ATOM   4809  N   CYS B 283      69.692  53.076  47.347  1.00 12.68           N
ATOM   4810  CA  CYS B 283      69.582  52.471  46.026  1.00 14.66           C
ATOM   4811  C   CYS B 283      69.553  53.452  44.864  1.00 12.13           C
ATOM   4812  O   CYS B 283      68.673  54.255  44.725  1.00 13.82           O
ATOM   4813  CB  CYS B 283      68.244  51.668  46.012  1.00 17.06           C
ATOM   4814  SG  CYS B 283      68.140  50.674  44.507  1.00 14.06           S
ATOM   4815  N   ASN B 284      70.620  53.380  44.070  1.00 13.37           N
ATOM   4816  CA  ASN B 284      70.767  54.190  42.855  1.00 14.56           C
ATOM   4817  C   ASN B 284      70.366  55.640  43.073  1.00 14.31           C
ATOM   4818  O   ASN B 284      69.482  56.192  42.403  1.00 15.21           O
ATOM   4819  CB  ASN B 284      69.940  53.566  41.726  1.00 12.20           C
ATOM   4820  CG  ASN B 284      70.316  52.135  41.425  1.00 16.26           C
ATOM   4821  OD1 ASN B 284      71.465  51.700  41.358  1.00 15.41           O
ATOM   4822  ND2 ASN B 284      69.314  51.298  41.223  1.00 18.26           N
ATOM   4823  N   VAL B 285      71.078  56.226  44.027  1.00 13.81           N
ATOM   4824  CA  VAL B 285      70.833  57.605  44.418  1.00 14.84           C
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ATOM   4825  C   VAL B 285      71.176  58.547  43.281  1.00 17.91           C
ATOM   4826  O   VAL B 285      72.205  58.439  42.610  1.00 16.75           O
ATOM   4827  CB  VAL B 285      71.569  58.000  45.709  1.00 11.45           C
ATOM   4828  CG1 VAL B 285      71.336  59.495  45.973  1.00 13.91           C
ATOM   4829  CG2 VAL B 285      70.959  57.145  46.827  1.00 16.29           C
ATOM   4830  N   ASN B 286      70.250  59.504  43.071  1.00 16.29           N
ATOM   4831  CA  ASN B 286      70.476  60.470  41.979  1.00 16.54           C
ATOM   4832  C   ASN B 286      69.860  61.799  42.348  1.00 15.52           C
ATOM   4833  O   ASN B 286      68.892  61.807  43.106  1.00 15.21           O
ATOM   4834  CB  ASN B 286      69.912  59.916  40.678  1.00 18.51           C
ATOM   4835  CG  ASN B 286      68.438  59.597  40.666  1.00 23.49           C
ATOM   4836  OD1 ASN B 286      67.883  58.810  41.424  1.00 24.91           O
ATOM   4837  ND2 ASN B 286      67.727  60.222  39.732  1.00 26.12           N
ATOM   4838  N   PRO B 287      70.520  62.886  41.991  1.00 16.84           N
ATOM   4839  CA  PRO B 287      71.731  62.923  41.204  1.00 15.33           C
ATOM   4840  C   PRO B 287      73.023  62.608  41.969  1.00 20.76           C
ATOM   4841  O   PRO B 287      73.191  62.979  43.119  1.00 18.29           O
ATOM   4842  CB  PRO B 287      71.862  64.412  40.768  1.00 17.77           C
ATOM   4843  CG  PRO B 287      71.057  65.157  41.796  1.00 24.90           C
ATOM   4844  CD  PRO B 287      69.996  64.231  42.347  1.00 20.11           C
ATOM   4845  N   ALA B 288      73.980  62.004  41.291  1.00 16.07           N
ATOM   4846  CA  ALA B 288      75.293  61.699  41.890  1.00 12.92           C
ATOM   4847  C   ALA B 288      76.345  61.834  40.776  1.00 12.89           C
ATOM   4848  O   ALA B 288      75.981  61.765  39.585  1.00 13.94           O
ATOM   4849  CB  ALA B 288      75.199  60.257  42.410  1.00 16.57           C
ATOM   4850  N   GLY B 289      77.608  61.805  41.206  1.00 14.38           N
ATOM   4851  CA  GLY B 289      78.717  61.872  40.264  1.00 14.79           C
ATOM   4852  C   GLY B 289      79.871  60.943  40.685  1.00 16.05           C
ATOM   4853  O   GLY B 289      79.944  60.554  41.862  1.00 16.87           O
ATOM   4854  N   PHE B 290      80.701  60.568  39.715  1.00 12.12           N
ATOM   4855  CA  PHE B 290      81.926  59.862  40.087  1.00 14.57           C
ATOM   4856  C   PHE B 290      82.690  60.736  41.070  1.00 14.55           C
ATOM   4857  O   PHE B 290      82.795  61.976  40.885  1.00 15.82           O
ATOM   4858  CB  PHE B 290      82.840  59.632  38.887  1.00 14.56           C
ATOM   4859  CG  PHE B 290      82.401  58.646  37.873  1.00 12.24           C
ATOM   4860  CD1 PHE B 290      81.898  57.403  38.281  1.00 17.69           C
ATOM   4861  CD2 PHE B 290      82.526  58.900  36.526  1.00 14.49           C
ATOM   4862  CE1 PHE B 290      81.516  56.477  37.329  1.00 15.94           C
ATOM   4863  CE2 PHE B 290      82.125  57.966  35.579  1.00 14.72           C
ATOM   4864  CZ  PHE B 290      81.604  56.744  35.971  1.00 13.26           C
ATOM   4865  N   GLY B 291      83.254  60.153  42.134  1.00 14.32           N
ATOM   4866  CA  GLY B 291      84.080  60.878  43.097  1.00 13.56           C
ATOM   4867  C   GLY B 291      85.575  60.795  42.756  1.00 14.72           C
ATOM   4868  O   GLY B 291      86.021  60.309  41.725  1.00 16.84           O
ATOM   4869  N   GLN B 292      86.344  61.367  43.673  1.00 16.20           N
ATOM   4870  CA  GLN B 292      87.785  61.417  43.454  1.00 19.01           C
ATOM   4871  C   GLN B 292      88.333  60.028  43.217  1.00 18.50           C
ATOM   4872  O   GLN B 292      88.113  59.157  44.037  1.00 20.58           O
ATOM   4873  CB  GLN B 292      88.381  61.895  44.786  1.00 16.55           C
ATOM   4874  CG  GLN B 292      89.820  61.601  45.118  1.00 30.27           C
ATOM   4875  CD  GLN B 292      90.769  62.538  44.403  1.00 36.94           C
ATOM   4876  OE1 GLN B 292      90.717  63.747  44.626  1.00 34.55           O
ATOM   4877  NE2 GLN B 292      91.611  61.962  43.560  1.00 29.92           N
ATOM   4878  N   PRO B 293      89.086  59.843  42.167  1.00 17.71           N
ATOM   4879  CA  PRO B 293      89.803  58.622  41.871  1.00 19.36           C
ATOM   4880  C   PRO B 293      90.854  58.335  42.942  1.00 18.36           C
ATOM   4881  O   PRO B 293      91.326  59.167  43.712  1.00 18.12           O
ATOM   4882  CB  PRO B 293      90.531  58.845  40.536  1.00 21.73           C
ATOM   4883  CG  PRO B 293      89.645  59.932  39.937  1.00 24.28           C
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ATOM   4884  CD  PRO B 293      89.302  60.841  41.102  1.00 20.17           C
ATOM   4885  N   PHE B 294      91.261  57.059  43.006  1.00 16.57           N
ATOM   4886  CA  PHE B 294      92.215  56.553  43.924  1.00 16.15           C
ATOM   4887  C   PHE B 294      93.376  57.526  44.216  1.00 16.82           C
ATOM   4888  O   PHE B 294      93.996  57.979  43.250  1.00 20.81           O
ATOM   4889  CB  PHE B 294      92.804  55.227  43.384  1.00 16.83           C
ATOM   4890  CG  PHE B 294      94.109  54.894  44.060  1.00 23.44           C
ATOM   4891  CD1 PHE B 294      94.122  54.537  45.393  1.00 21.32           C
ATOM   4892  CD2 PHE B 294      95.305  55.006  43.364  1.00 18.05           C
ATOM   4893  CE1 PHE B 294      95.325  54.251  46.024  1.00 25.41           C
ATOM   4894  CE2 PHE B 294      96.510  54.726  43.995  1.00 18.84           C
ATOM   4895  CZ  PHE B 294      96.515  54.361  45.327  1.00 18.69           C
ATOM   4896  N   THR B 295      93.628  57.702  45.484  1.00 15.75           N
ATOM   4897  CA  THR B 295      94.797  58.491  45.902  1.00 19.31           C
ATOM   4898  C   THR B 295      95.174  58.162  47.341  1.00 23.18           C
ATOM   4899  O   THR B 295      94.333  57.930  48.215  1.00 22.10           O
ATOM   4900  CB  THR B 295      94.546  59.993  45.778  1.00 16.87           C
ATOM   4901  OG1 THR B 295      95.759  60.706  46.216  1.00 20.58           O
ATOM   4902  CG2 THR B 295      93.476  60.529  46.701  1.00 23.09           C
ATOM   4903  N   THR B 296      96.462  58.245  47.649  1.00 19.25           N
ATOM   4904  CA  THR B 296      97.022  58.148  48.983  1.00 19.89           C
ATOM   4905  C   THR B 296      97.117  59.554  49.589  1.00 23.47           C
ATOM   4906  O   THR B 296      97.290  59.735  50.797  1.00 26.59           O
ATOM   4907  CB  THR B 296      98.393  57.455  48.999  1.00 30.30           C
ATOM   4908  OG1 THR B 296      99.329  58.080  48.102  1.00 27.34           O
ATOM   4909  CG2 THR B 296      98.262  56.010  48.525  1.00 21.53           C
ATOM   4910  N   ASN B 297      96.818  60.592  48.797  1.00 24.34           N
ATOM   4911  CA  ASN B 297      96.844  61.963  49.359  1.00 27.55           C
ATOM   4912  C   ASN B 297      95.489  62.289  49.977  1.00 26.04           C
ATOM   4913  O   ASN B 297      94.632  62.886  49.330  1.00 25.16           O
ATOM   4914  CB  ASN B 297      97.273  62.887  48.234  1.00 29.73           C
ATOM   4915  CG  ASN B 297      97.614  64.306  48.636  1.00 39.58           C
ATOM   4916  OD1 ASN B 297      97.568  64.672  49.805  1.00 35.86           O
ATOM   4917  ND2 ASN B 297      97.949  65.109  47.628  1.00 41.91           N
ATOM   4918  N   THR B 298      95.267  61.850  51.220  1.00 24.28           N
ATOM   4919  CA  THR B 298      94.005  61.925  51.918  1.00 24.81           C
ATOM   4920  C   THR B 298      93.823  62.981  52.978  1.00 19.80           C
ATOM   4921  O   THR B 298      92.743  63.235  53.507  1.00 22.95           O
ATOM   4922  CB  THR B 298      93.701  60.556  52.594  1.00 23.11           C
ATOM   4923  OG1 THR B 298      94.702  60.282  53.589  1.00 23.00           O
ATOM   4924  CG2 THR B 298      93.698  59.411  51.578  1.00 19.46           C
ATOM   4925  N   ASN B 299      94.955  63.577  53.443  1.00 24.08           N
ATOM   4926  CA  ASN B 299      94.877  64.613  54.472  1.00 27.10           C
ATOM   4927  C   ASN B 299      94.219  64.126  55.754  1.00 25.38           C
ATOM   4928  O   ASN B 299      93.474  64.767  56.495  1.00 28.22           O
ATOM   4929  CB  ASN B 299      94.178  65.816  53.842  1.00 34.95           C
ATOM   4930  CG  ASN B 299      94.840  66.388  52.606  1.00 50.61           C
ATOM   4931  OD1 ASN B 299      94.167  66.712  51.622  1.00 51.90           O
ATOM   4932  ND2 ASN B 299      96.164  66.522  52.624  1.00 52.62           N
ATOM   4933  N   ASN B 300      94.496  62.853  56.080  1.00 29.32           N
ATOM   4934  CA  ASN B 300      93.978  62.180  57.274  1.00 29.91           C
ATOM   4935  C   ASN B 300      94.899  60.976  57.453  1.00 26.89           C
ATOM   4936  O   ASN B 300      94.995  60.090  56.612  1.00 24.38           O
ATOM   4937  CB  ASN B 300      92.526  61.740  57.117  1.00 26.98           C
ATOM   4938  CG  ASN B 300      91.862  61.285  58.389  1.00 22.71           C
ATOM   4939  OD1 ASN B 300      92.503  60.721  59.312  1.00 23.84           O
ATOM   4940  ND2 ASN B 300      90.568  61.539  58.546  1.00 24.04           N
ATOM   4941  N   PRO B 301      95.630  60.969  58.564  1.00 28.29           N
ATOM   4942  CA  PRO B 301      96.603  59.944  58.877  1.00 28.45           C
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ATOM   4943  C   PRO B 301      95.950  58.579  59.090  1.00 26.03           C
ATOM   4944  O   PRO B 301      96.644  57.584  58.891  1.00 27.20           O
ATOM   4945  CB  PRO B 301      97.325  60.385  60.172  1.00 31.40           C
ATOM   4946  CG  PRO B 301      96.271  61.258  60.787  1.00 29.13           C
ATOM   4947  CD  PRO B 301      95.522  61.951  59.647  1.00 27.45           C
ATOM   4948  N   ASN B 302      94.670  58.582  59.456  1.00 24.31           N
ATOM   4949  CA  ASN B 302      94.010  57.270  59.623  1.00 17.94           C
ATOM   4950  C   ASN B 302      93.250  56.833  58.383  1.00 23.46           C
ATOM   4951  O   ASN B 302      92.516  55.829  58.492  1.00 21.92           O
ATOM   4952  CB  ASN B 302      93.052  57.339  60.800  1.00 23.72           C
ATOM   4953  CG  ASN B 302      93.859  57.544  62.081  1.00 32.32           C
ATOM   4954  OD1 ASN B 302      93.402  58.344  62.876  1.00 28.78           O
ATOM   4955  ND2 ASN B 302      94.995  56.875  62.208  1.00 28.32           N
ATOM   4956  N   VAL B 303      93.428  57.528  57.282  1.00 18.31           N
ATOM   4957  CA  VAL B 303      92.845  57.140  55.988  1.00 19.53           C
ATOM   4958  C   VAL B 303      93.990  56.793  55.056  1.00 22.04           C
ATOM   4959  O   VAL B 303      94.810  57.576  54.515  1.00 20.79           O
ATOM   4960  CB  VAL B 303      91.877  58.194  55.407  1.00 15.05           C
ATOM   4961  CG1 VAL B 303      91.381  57.717  54.039  1.00 16.25           C
ATOM   4962  CG2 VAL B 303      90.718  58.492  56.338  1.00 20.06           C
ATOM   4963  N   ASP B 304      94.201  55.479  54.860  1.00 20.31           N
ATOM   4964  CA  ASP B 304      95.268  54.971  54.029  1.00 17.92           C
ATOM   4965  C   ASP B 304      95.111  55.406  52.568  1.00 20.89           C
ATOM   4966  O   ASP B 304      96.065  55.783  51.886  1.00 22.23           O
ATOM   4967  CB  ASP B 304      95.362  53.453  54.046  1.00 20.18           C
ATOM   4968  CG  ASP B 304      96.019  52.851  55.258  1.00 21.75           C
ATOM   4969  OD1 ASP B 304      96.823  53.498  55.975  1.00 20.68           O
ATOM   4970  OD2 ASP B 304      95.724  51.650  55.489  1.00 20.32           O
ATOM   4971  N   ALA B 305      93.860  55.351  52.098  1.00 19.29           N
ATOM   4972  CA  ALA B 305      93.601  55.759  50.747  1.00 18.86           C
ATOM   4973  C   ALA B 305      92.112  55.997  50.462  1.00 20.52           C
ATOM   4974  O   ALA B 305      91.253  55.458  51.134  1.00 16.38           O
ATOM   4975  CB  ALA B 305      94.093  54.699  49.773  1.00 24.87           C
ATOM   4976  N   ILE B 306      91.901  56.849  49.470  1.00 21.75           N
ATOM   4977  CA  ILE B 306      90.554  57.011  48.884  1.00 16.22           C
ATOM   4978  C   ILE B 306      90.603  56.061  47.700  1.00 16.41           C
ATOM   4979  O   ILE B 306      91.590  55.973  46.952  1.00 17.02           O
ATOM   4980  CB  ILE B 306      90.323  58.462  48.419  1.00 17.23           C
ATOM   4981  CG1 ILE B 306      89.975  59.367  49.594  1.00 22.93           C
ATOM   4982  CG2 ILE B 306      89.188  58.496  47.400  1.00 17.43           C
ATOM   4983  CD1 ILE B 306      90.105  60.852  49.248  1.00 21.04           C
ATOM   4984  N   VAL B 307      89.572  55.192  47.559  1.00 14.89           N
ATOM   4985  CA  VAL B 307      89.531  54.185  46.538  1.00 17.89           C
ATOM   4986  C   VAL B 307      88.172  54.196  45.825  1.00 13.24           C
ATOM   4987  O   VAL B 307      87.311  54.920  46.282  1.00 13.69           O
ATOM   4988  CB  VAL B 307      89.684  52.752  47.152  1.00 11.95           C
ATOM   4989  CG1 VAL B 307      91.149  52.568  47.634  1.00 16.72           C
ATOM   4990  CG2 VAL B 307      88.759  52.486  48.299  1.00 15.70           C
ATOM   4991  N   TRP B 308      88.021  53.379  44.795  1.00 14.95           N
ATOM   4992  CA  TRP B 308      86.686  53.165  44.207  1.00 11.27           C
ATOM   4993  C   TRP B 308      86.400  51.692  44.521  1.00 14.29           C
ATOM   4994  O   TRP B 308      87.217  50.868  44.096  1.00 14.70           O
ATOM   4995  CB  TRP B 308      86.540  53.367  42.708  1.00 12.68           C
ATOM   4996  CG  TRP B 308      86.445  54.809  42.281  1.00 14.81           C
ATOM   4997  CD1 TRP B 308      86.775  55.892  43.036  1.00 15.98           C
ATOM   4998  CD2 TRP B 308      85.992  55.283  41.021  1.00 13.63           C
ATOM   4999  NE1 TRP B 308      86.511  57.060  42.315  1.00 14.41           N
ATOM   5000  CE2 TRP B 308      86.039  56.696  41.094  1.00 12.63           C
ATOM   5001  CE3 TRP B 308      85.553  54.666  39.850  1.00 11.90           C
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ATOM   5002  CZ2 TRP B 308      85.667  57.480  39.984  1.00 12.59           C
ATOM   5003  CZ3 TRP B 308      85.141  55.441  38.773  1.00 14.38           C
ATOM   5004  CH2 TRP B 308      85.265  56.827  38.868  1.00 15.58           C
ATOM   5005  N   VAL B 309      85.299  51.443  45.230  1.00 13.29           N
ATOM   5006  CA  VAL B 309      84.972  50.037  45.507  1.00 14.73           C
ATOM   5007  C   VAL B 309      83.750  49.608  44.706  1.00 13.65           C
ATOM   5008  O   VAL B 309      83.879  48.722  43.867  1.00 13.80           O
ATOM   5009  CB  VAL B 309      84.734  49.821  46.980  1.00 12.40           C
ATOM   5010  CG1 VAL B 309      84.566  48.313  47.282  1.00 13.46           C
ATOM   5011  CG2 VAL B 309      85.948  50.337  47.749  1.00 10.65           C
ATOM   5012  N   LYS B 310      82.619  50.234  44.912  1.00 12.78           N
ATOM   5013  CA  LYS B 310      81.449  49.907  44.078  1.00 11.36           C
ATOM   5014  C   LYS B 310      81.740  50.360  42.667  1.00 13.36           C
ATOM   5015  O   LYS B 310      82.224  51.488  42.520  1.00 14.33           O
ATOM   5016  CB  LYS B 310      80.261  50.704  44.648  1.00 14.63           C
ATOM   5017  CG  LYS B 310      79.036  50.837  43.769  1.00 10.97           C
ATOM   5018  CD  LYS B 310      78.204  49.575  43.718  1.00 12.43           C
ATOM   5019  CE  LYS B 310      77.103  49.754  42.675  1.00 11.20           C
ATOM   5020  NZ  LYS B 310      76.158  48.578  42.821  1.00 12.70           N
ATOM   5021  N   PRO B 311      81.409  49.601  41.642  1.00 12.47           N
ATOM   5022  CA  PRO B 311      81.669  49.978  40.249  1.00 14.66           C
ATOM   5023  C   PRO B 311      80.498  50.829  39.775  1.00 14.22           C
ATOM   5024  O   PRO B 311      79.444  50.257  39.427  1.00 15.04           O
ATOM   5025  CB  PRO B 311      81.788  48.682  39.433  1.00 15.63           C
ATOM   5026  CG  PRO B 311      82.043  47.691  40.573  1.00 14.70           C
ATOM   5027  CD  PRO B 311      81.088  48.165  41.700  1.00 12.82           C
ATOM   5028  N   GLY B 312      80.608  52.139  39.907  1.00 13.21           N
ATOM   5029  CA  GLY B 312      79.469  53.012  39.589  1.00 11.15           C
ATOM   5030  C   GLY B 312      78.962  52.784  38.170  1.00 12.40           C
ATOM   5031  O   GLY B 312      79.705  52.893  37.222  1.00 14.28           O
ATOM   5032  N   GLY B 313      77.656  52.548  38.046  1.00 12.20           N
ATOM   5033  CA  GLY B 313      77.094  52.123  36.763  1.00 11.67           C
ATOM   5034  C   GLY B 313      76.479  50.737  36.964  1.00 10.84           C
ATOM   5035  O   GLY B 313      75.506  50.481  36.273  1.00 15.55           O
ATOM   5036  N   GLU B 314      76.998  49.902  37.884  1.00 14.09           N
ATOM   5037  CA  GLU B 314      76.294  48.640  38.241  1.00 11.26           C
ATOM   5038  C   GLU B 314      75.156  48.979  39.210  1.00 15.02           C
ATOM   5039  O   GLU B 314      75.322  49.622  40.235  1.00 14.85           O
ATOM   5040  CB  GLU B 314      77.227  47.638  38.916  1.00 12.56           C
ATOM   5041  CG  GLU B 314      78.345  47.197  37.989  1.00 13.65           C
ATOM   5042  CD  GLU B 314      79.269  46.157  38.596  1.00 20.26           C
ATOM   5043  OE1 GLU B 314      79.220  45.790  39.779  1.00 18.56           O
ATOM   5044  OE2 GLU B 314      80.126  45.667  37.826  1.00 19.69           O
ATOM   5045  N   SER B 315      73.944  48.583  38.816  1.00 14.99           N
ATOM   5046  CA  SER B 315      72.771  48.879  39.634  1.00 14.73           C
ATOM   5047  C   SER B 315      72.870  48.300  41.037  1.00 13.26           C
ATOM   5048  O   SER B 315      73.336  47.195  41.262  1.00 15.35           O
ATOM   5049  CB  SER B 315      71.539  48.241  38.950  1.00 15.36           C
ATOM   5050  OG  SER B 315      70.384  48.695  39.680  1.00 14.07           O
ATOM   5051  N   ASP B 316      72.193  49.015  41.949  1.00 13.79           N
ATOM   5052  CA  ASP B 316      72.043  48.515  43.320  1.00 11.24           C
ATOM   5053  C   ASP B 316      70.763  47.686  43.457  1.00 15.64           C
ATOM   5054  O   ASP B 316      70.565  47.094  44.534  1.00 16.84           O
ATOM   5055  CB  ASP B 316      71.918  49.667  44.335  1.00 11.91           C
ATOM   5056  CG  ASP B 316      73.175  50.524  44.351  1.00 17.95           C
ATOM   5057  OD1 ASP B 316      74.263  49.936  44.427  1.00 15.26           O
ATOM   5058  OD2 ASP B 316      73.013  51.757  44.339  1.00 13.75           O
ATOM   5059  N   GLY B 317      69.974  47.626  42.383  1.00 14.29           N
ATOM   5060  CA  GLY B 317      68.667  46.962  42.484  1.00 17.43           C
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ATOM   5061  C   GLY B 317      67.632  47.787  41.733  1.00 15.37           C
ATOM   5062  O   GLY B 317      67.876  48.859  41.215  1.00 16.97           O
ATOM   5063  N   GLN B 318      66.437  47.195  41.540  1.00 17.59           N
ATOM   5064  CA  GLN B 318      65.406  47.926  40.758  1.00 15.47           C
ATOM   5065  C   GLN B 318      64.751  48.890  41.740  1.00 22.68           C
ATOM   5066  O   GLN B 318      63.691  48.608  42.320  1.00 23.51           O
ATOM   5067  CB  GLN B 318      64.360  46.888  40.293  1.00 14.02           C
ATOM   5068  CG  GLN B 318      64.917  45.887  39.325  1.00 15.43           C
ATOM   5069  CD  GLN B 318      64.300  44.495  39.327  1.00 23.03           C
ATOM   5070  OE1 GLN B 318      64.058  43.792  40.291  1.00 23.47           O
ATOM   5071  NE2 GLN B 318      64.130  43.985  38.123  1.00 18.29           N
ATOM   5072  N   CYS B 319      65.378  50.029  41.963  1.00 21.27           N
ATOM   5073  CA  CYS B 319      64.938  51.000  42.955  1.00 19.17           C
ATOM   5074  C   CYS B 319      65.762  52.263  42.667  1.00 21.68           C
ATOM   5075  O   CYS B 319      66.610  52.187  41.753  1.00 17.30           O
ATOM   5076  CB  CYS B 319      65.119  50.517  44.387  1.00 14.69           C
ATOM   5077  SG  CYS B 319      66.550  49.505  44.821  1.00 14.68           S
ATOM   5078  N   GLY B 320      65.449  53.332  43.373  1.00 20.58           N
ATOM   5079  CA  GLY B 320      66.123  54.596  43.086  1.00 14.87           C
ATOM   5080  C   GLY B 320      65.812  55.025  41.651  1.00 22.75           C
ATOM   5081  O   GLY B 320      64.696  54.914  41.173  1.00 20.22           O
ATOM   5082  N   MET B 321      66.820  55.475  40.924  1.00 24.95           N
ATOM   5083  CA  MET B 321      66.659  55.983  39.581  1.00 24.67           C
ATOM   5084  C   MET B 321      65.847  55.079  38.673  1.00 26.28           C
ATOM   5085  O   MET B 321      66.088  53.883  38.560  1.00 22.52           O
ATOM   5086  CB  MET B 321      68.053  56.249  38.981  1.00 24.83           C
ATOM   5087  CG  MET B 321      67.907  56.968  37.630  1.00 19.87           C
ATOM   5088  SD  MET B 321      69.561  57.484  37.139  1.00 20.71           S
ATOM   5089  CE  MET B 321      69.517  57.154  35.383  1.00 19.55           C
ATOM   5090  N   GLY B 322      64.850  55.664  38.014  1.00 22.65           N
ATOM   5091  CA  GLY B 322      63.975  54.949  37.116  1.00 27.77           C
ATOM   5092  C   GLY B 322      64.732  54.273  35.974  1.00 20.77           C
ATOM   5093  O   GLY B 322      65.711  54.760  35.455  1.00 24.66           O
ATOM   5094  N   GLY B 323      64.224  53.080  35.645  1.00 24.85           N
ATOM   5095  CA  GLY B 323      64.777  52.208  34.640  1.00 24.99           C
ATOM   5096  C   GLY B 323      65.819  51.273  35.238  1.00 24.75           C
ATOM   5097  O   GLY B 323      66.540  50.623  34.483  1.00 23.18           O
ATOM   5098  N   ALA B 324      65.983  51.299  36.563  1.00 21.11           N
ATOM   5099  CA  ALA B 324      67.046  50.519  37.173  1.00 21.32           C
ATOM   5100  C   ALA B 324      66.774  49.023  37.079  1.00 21.16           C
ATOM   5101  O   ALA B 324      65.717  48.521  37.460  1.00 20.17           O
ATOM   5102  CB  ALA B 324      67.205  50.888  38.648  1.00 18.27           C
ATOM   5103  N   PRO B 325      67.795  48.303  36.676  1.00 17.93           N
ATOM   5104  CA  PRO B 325      67.767  46.867  36.532  1.00 17.77           C
ATOM   5105  C   PRO B 325      68.166  46.232  37.865  1.00 18.95           C
ATOM   5106  O   PRO B 325      68.424  46.937  38.844  1.00 18.68           O
ATOM   5107  CB  PRO B 325      68.785  46.541  35.423  1.00 18.76           C
ATOM   5108  CG  PRO B 325      69.832  47.590  35.757  1.00 20.96           C
ATOM   5109  CD  PRO B 325      69.067  48.848  36.132  1.00 17.27           C
ATOM   5110  N   ALA B 326      68.113  44.923  37.906  1.00 15.89           N
ATOM   5111  CA  ALA B 326      68.385  44.174  39.129  1.00 20.27           C
ATOM   5112  C   ALA B 326      69.802  44.411  39.595  1.00 21.35           C
ATOM   5113  O   ALA B 326      70.709  44.866  38.872  1.00 19.75           O
ATOM   5114  CB  ALA B 326      68.000  42.721  38.869  1.00 22.21           C
ATOM   5115  N   ALA B 327      70.080  44.150  40.863  1.00 15.97           N
ATOM   5116  CA  ALA B 327      71.392  44.371  41.448  1.00 15.02           C
ATOM   5117  C   ALA B 327      72.533  43.748  40.640  1.00 20.42           C
ATOM   5118  O   ALA B 327      72.504  42.591  40.232  1.00 21.94           O
ATOM   5119  CB  ALA B 327      71.452  43.803  42.869  1.00 18.25           C
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ATOM   5120  N   GLY B 328      73.556  44.570  40.432  1.00 17.85           N
ATOM   5121  CA  GLY B 328      74.734  44.200  39.671  1.00 15.80           C
ATOM   5122  C   GLY B 328      74.522  44.308  38.146  1.00 13.02           C
ATOM   5123  O   GLY B 328      75.563  44.150  37.488  1.00 17.91           O
ATOM   5124  N   MET B 329      73.339  44.536  37.648  1.00 14.05           N
ATOM   5125  CA  MET B 329      73.187  44.626  36.178  1.00 16.72           C
ATOM   5126  C   MET B 329      73.655  46.016  35.783  1.00 16.72           C
ATOM   5127  O   MET B 329      73.507  46.968  36.558  1.00 18.00           O
ATOM   5128  CB  MET B 329      71.703  44.478  35.815  1.00 17.62           C
ATOM   5129  CG  MET B 329      71.148  43.088  36.101  1.00 21.62           C
ATOM   5130  SD  MET B 329      71.711  41.853  34.921  1.00 21.71           S
ATOM   5131  CE  MET B 329      70.731  42.298  33.467  1.00 18.50           C
ATOM   5132  N   TRP B 330      74.158  46.132  34.566  1.00 14.64           N
ATOM   5133  CA  TRP B 330      74.611  47.412  34.062  1.00 16.09           C
ATOM   5134  C   TRP B 330      73.444  48.353  33.806  1.00 14.70           C
ATOM   5135  O   TRP B 330      72.396  48.025  33.253  1.00 17.39           O
ATOM   5136  CB  TRP B 330      75.413  47.152  32.769  1.00 16.88           C
ATOM   5137  CG  TRP B 330      76.152  48.413  32.382  1.00 15.32           C
ATOM   5138  CD1 TRP B 330      75.913  49.194  31.287  1.00 16.38           C
ATOM   5139  CD2 TRP B 330      77.213  49.007  33.105  1.00 14.28           C
ATOM   5140  NE1 TRP B 330      76.780  50.270  31.291  1.00 13.72           N
ATOM   5141  CE2 TRP B 330      77.605  50.169  32.389  1.00 14.27           C
ATOM   5142  CE3 TRP B 330      77.889  48.672  34.282  1.00 15.92           C
ATOM   5143  CZ2 TRP B 330      78.637  50.995  32.842  1.00 15.79           C
ATOM   5144  CZ3 TRP B 330      78.921  49.494  34.714  1.00 20.19           C
ATOM   5145  CH2 TRP B 330      79.280  50.647  33.992  1.00 16.72           C
ATOM   5146  N   PHE B 331      73.603  49.579  34.262  1.00 14.26           N
ATOM   5147  CA  PHE B 331      72.631  50.645  34.198  1.00 12.56           C
ATOM   5148  C   PHE B 331      73.277  51.818  33.482  1.00 16.00           C
ATOM   5149  O   PHE B 331      73.748  52.750  34.100  1.00 16.17           O
ATOM   5150  CB  PHE B 331      72.171  50.926  35.632  1.00 14.49           C
ATOM   5151  CG  PHE B 331      71.002  51.856  35.770  1.00 13.84           C
ATOM   5152  CD1 PHE B 331      70.246  52.354  34.721  1.00 14.56           C
ATOM   5153  CD2 PHE B 331      70.653  52.210  37.068  1.00 12.45           C
ATOM   5154  CE1 PHE B 331      69.204  53.213  34.937  1.00 17.22           C
ATOM   5155  CE2 PHE B 331      69.579  53.083  37.268  1.00 16.15           C
ATOM   5156  CZ  PHE B 331      68.844  53.568  36.226  1.00 14.96           C
ATOM   5157  N   ASP B 332      73.307  51.684  32.136  1.00 15.82           N
ATOM   5158  CA  ASP B 332      74.068  52.692  31.372  1.00 14.89           C
ATOM   5159  C   ASP B 332      73.656  54.120  31.616  1.00 16.28           C
ATOM   5160  O   ASP B 332      74.516  55.013  31.778  1.00 15.63           O
ATOM   5161  CB  ASP B 332      74.023  52.384  29.845  1.00 12.37           C
ATOM   5162  CG  ASP B 332      75.290  52.999  29.236  1.00 15.09           C
ATOM   5163  OD1 ASP B 332      76.376  52.553  29.641  1.00 16.23           O
ATOM   5164  OD2 ASP B 332      75.029  53.878  28.395  1.00 17.26           O
ATOM   5165  N   ALA B 333      72.375  54.477  31.685  1.00 17.37           N
ATOM   5166  CA  ALA B 333      72.005  55.867  31.958  1.00 14.48           C
ATOM   5167  C   ALA B 333      72.529  56.367  33.293  1.00 13.03           C
ATOM   5168  O   ALA B 333      72.765  57.580  33.459  1.00 16.00           O
ATOM   5169  CB  ALA B 333      70.478  55.995  31.914  1.00 18.93           C
ATOM   5170  N   TYR B 334      72.653  55.489  34.287  1.00 14.79           N
ATOM   5171  CA  TYR B 334      73.238  55.916  35.567  1.00 15.54           C
ATOM   5172  C   TYR B 334      74.744  56.190  35.447  1.00 14.76           C
ATOM   5173  O   TYR B 334      75.270  57.152  35.997  1.00 14.60           O
ATOM   5174  CB  TYR B 334      72.924  54.852  36.607  1.00 14.79           C
ATOM   5175  CG  TYR B 334      73.200  55.311  38.009  1.00 14.39           C
ATOM   5176  CD1 TYR B 334      74.472  55.268  38.535  1.00 13.24           C
ATOM   5177  CD2 TYR B 334      72.190  55.795  38.826  1.00 19.92           C
ATOM   5178  CE1 TYR B 334      74.758  55.708  39.833  1.00 10.89           C
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ATOM   5179  CE2 TYR B 334      72.423  56.215  40.113  1.00 14.81           C
ATOM   5180  CZ  TYR B 334      73.718  56.145  40.618  1.00 17.00           C
ATOM   5181  OH  TYR B 334      73.941  56.617  41.885  1.00 15.30           O
ATOM   5182  N   ALA B 335      75.440  55.376  34.648  1.00 14.75           N
ATOM   5183  CA  ALA B 335      76.858  55.517  34.354  1.00 14.21           C
ATOM   5184  C   ALA B 335      77.037  56.846  33.582  1.00 15.83           C
ATOM   5185  O   ALA B 335      77.933  57.607  33.921  1.00 16.22           O
ATOM   5186  CB  ALA B 335      77.427  54.363  33.559  1.00 17.01           C
ATOM   5187  N   GLN B 336      76.050  57.169  32.733  1.00 13.70           N
ATOM   5188  CA  GLN B 336      76.150  58.467  32.034  1.00 17.57           C
ATOM   5189  C   GLN B 336      76.036  59.643  32.987  1.00 15.83           C
ATOM   5190  O   GLN B 336      76.803  60.644  32.981  1.00 14.80           O
ATOM   5191  CB  GLN B 336      75.149  58.505  30.890  1.00 16.21           C
ATOM   5192  CG  GLN B 336      75.471  57.638  29.680  1.00 19.45           C
ATOM   5193  CD  GLN B 336      74.324  57.610  28.662  1.00 19.15           C
ATOM   5194  OE1 GLN B 336      73.880  58.705  28.298  1.00 21.21           O
ATOM   5195  NE2 GLN B 336      73.927  56.404  28.315  1.00 17.62           N
ATOM   5196  N   MET B 337      75.076  59.580  33.925  1.00 15.24           N
ATOM   5197  CA  MET B 337      74.903  60.627  34.933  1.00 15.88           C
ATOM   5198  C   MET B 337      76.142  60.819  35.785  1.00 15.62           C
ATOM   5199  O   MET B 337      76.679  61.905  36.045  1.00 15.22           O
ATOM   5200  CB  MET B 337      73.688  60.289  35.834  1.00 15.13           C
ATOM   5201  CG  MET B 337      73.743  61.191  37.099  1.00 15.31           C
ATOM   5202  SD  MET B 337      72.582  60.588  38.364  1.00 15.31           S
ATOM   5203  CE  MET B 337      73.524  59.199  39.035  1.00 20.45           C
ATOM   5204  N   LEU B 338      76.770  59.694  36.202  1.00 13.63           N
ATOM   5205  CA  LEU B 338      77.969  59.774  37.028  1.00 12.19           C
ATOM   5206  C   LEU B 338      79.113  60.449  36.260  1.00 15.16           C
ATOM   5207  O   LEU B 338      79.891  61.162  36.874  1.00 17.16           O
ATOM   5208  CB  LEU B 338      78.503  58.357  37.382  1.00 14.20           C
ATOM   5209  CG  LEU B 338      77.608  57.594  38.380  1.00 12.41           C
ATOM   5210  CD1 LEU B 338      78.170  56.196  38.662  1.00 12.02           C
ATOM   5211  CD2 LEU B 338      77.571  58.216  39.753  1.00 13.59           C
ATOM   5212  N   THR B 339      79.172  60.253  34.960  1.00 13.77           N
ATOM   5213  CA  THR B 339      80.194  60.822  34.103  1.00 13.86           C
ATOM   5214  C   THR B 339      79.947  62.333  33.957  1.00 16.24           C
ATOM   5215  O   THR B 339      80.838  63.158  34.147  1.00 17.72           O
ATOM   5216  CB  THR B 339      80.156  60.183  32.705  1.00 15.98           C
ATOM   5217  OG1 THR B 339      80.425  58.760  32.823  1.00 15.82           O
ATOM   5218  CG2 THR B 339      81.296  60.734  31.820  1.00 15.86           C
ATOM   5219  N   GLN B 340      78.694  62.706  33.675  1.00 15.53           N
ATOM   5220  CA  GLN B 340      78.327  64.124  33.556  1.00 17.42           C
ATOM   5221  C   GLN B 340      78.686  64.878  34.817  1.00 20.77           C
ATOM   5222  O   GLN B 340      79.222  65.994  34.793  1.00 21.75           O
ATOM   5223  CB  GLN B 340      76.808  64.216  33.278  1.00 19.47           C
ATOM   5224  CG  GLN B 340      76.514  63.658  31.893  1.00 28.91           C
ATOM   5225  CD  GLN B 340      75.119  63.924  31.363  1.00 41.77           C
ATOM   5226  OE1 GLN B 340      74.986  64.138  30.149  1.00 31.47           O
ATOM   5227  NE2 GLN B 340      74.118  63.889  32.234  1.00 37.28           N
ATOM   5228  N   ASN B 341      78.441  64.309  36.005  1.00 18.07           N
ATOM   5229  CA  ASN B 341      78.740  64.989  37.256  1.00 19.06           C
ATOM   5230  C   ASN B 341      80.075  64.597  37.881  1.00 15.53           C
ATOM   5231  O   ASN B 341      80.233  64.710  39.115  1.00 19.04           O
ATOM   5232  CB  ASN B 341      77.641  64.656  38.283  1.00 25.21           C
ATOM   5233  CG  ASN B 341      76.273  65.115  37.815  1.00 30.07           C
ATOM   5234  OD1 ASN B 341      76.166  66.220  37.289  1.00 29.59           O
ATOM   5235  ND2 ASN B 341      75.284  64.263  38.024  1.00 27.05           N
ATOM   5236  N   ALA B 342      80.998  64.063  37.109  1.00 16.08           N
ATOM   5237  CA  ALA B 342      82.250  63.523  37.561  1.00 14.20           C
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ATOM   5238  C   ALA B 342      83.199  64.529  38.175  1.00 16.06           C
ATOM   5239  O   ALA B 342      83.217  65.686  37.753  1.00 18.87           O
ATOM   5240  CB  ALA B 342      83.019  62.766  36.475  1.00 16.71           C
ATOM   5241  N   HIS B 343      83.931  64.067  39.175  1.00 17.34           N
ATOM   5242  CA  HIS B 343      85.008  64.836  39.809  1.00 18.17           C
ATOM   5243  C   HIS B 343      85.915  65.431  38.730  1.00 18.50           C
ATOM   5244  O   HIS B 343      86.200  64.789  37.710  1.00 17.20           O
ATOM   5245  CB  HIS B 343      85.784  63.852  40.691  1.00 19.94           C
ATOM   5246  CG  HIS B 343      86.774  64.465  41.621  1.00 22.89           C
ATOM   5247  ND1 HIS B 343      88.000  64.909  41.162  1.00 23.62           N
ATOM   5248  CD2 HIS B 343      86.703  64.773  42.934  1.00 19.84           C
ATOM   5249  CE1 HIS B 343      88.658  65.422  42.190  1.00 27.92           C
ATOM   5250  NE2 HIS B 343      87.906  65.362  43.275  1.00 27.70           N
ATOM   5251  N   ASP B 344      86.403  66.641  38.974  1.00 25.16           N
ATOM   5252  CA  ASP B 344      87.307  67.338  38.068  1.00 21.59           C
ATOM   5253  C   ASP B 344      88.558  66.591  37.673  1.00 26.29           C
ATOM   5254  O   ASP B 344      89.141  66.903  36.628  1.00 22.86           O
ATOM   5255  CB  ASP B 344      87.746  68.637  38.790  1.00 28.98           C
ATOM   5256  CG  ASP B 344      86.684  69.662  39.075  1.00 41.99           C
ATOM   5257  OD1 ASP B 344      85.782  69.858  38.231  1.00 41.42           O
ATOM   5258  OD2 ASP B 344      86.722  70.322  40.145  1.00 50.37           O
ATOM   5259  N   GLU B 345      89.059  65.567  38.364  1.00 18.73           N
ATOM   5260  CA  GLU B 345      90.241  64.832  37.985  1.00 18.17           C
ATOM   5261  C   GLU B 345      90.008  64.038  36.691  1.00 21.30           C
ATOM   5262  O   GLU B 345      90.930  63.660  35.964  1.00 21.94           O
ATOM   5263  CB  GLU B 345      90.628  63.874  39.110  1.00 20.24           C
ATOM   5264  CG  GLU B 345      91.837  63.010  38.757  1.00 25.76           C
ATOM   5265  CD  GLU B 345      92.587  62.562  40.004  1.00 36.30           C
ATOM   5266  OE1 GLU B 345      92.592  63.298  41.018  1.00 33.65           O
ATOM   5267  OE2 GLU B 345      93.185  61.458  39.968  1.00 34.93           O
ATOM   5268  N   ILE B 346      88.745  63.635  36.496  1.00 17.40           N
ATOM   5269  CA  ILE B 346      88.371  62.847  35.329  1.00 16.88           C
ATOM   5270  C   ILE B 346      88.219  63.690  34.074  1.00 17.04           C
ATOM   5271  O   ILE B 346      87.359  64.583  34.071  1.00 20.05           O
ATOM   5272  CB  ILE B 346      87.041  62.130  35.697  1.00 15.39           C
ATOM   5273  CG1 ILE B 346      87.409  61.190  36.850  1.00 18.55           C
ATOM   5274  CG2 ILE B 346      86.493  61.353  34.507  1.00 18.29           C
ATOM   5275  CD1 ILE B 346      86.198  60.561  37.539  1.00 14.82           C
ATOM   5276  N   ALA B 347      88.960  63.398  33.021  1.00 18.37           N
ATOM   5277  CA  ALA B 347      88.861  64.168  31.760  1.00 17.33           C
ATOM   5278  C   ALA B 347      89.318  63.412  30.497  1.00 20.08           C
ATOM   5279  O   ALA B 347      90.250  62.608  30.770  1.00 20.39           O
ATOM   5280  CB  ALA B 347      89.727  65.428  31.837  1.00 20.16           C
ATOM   5281  OW0 WAT W   1      79.112  54.022  45.738  1.00 12.17           O
ATOM   5282  OW0 WAT W   2       4.055  20.110  23.781  1.00 12.73           O
ATOM   5283  OW0 WAT W   3       2.034  21.964  24.841  1.00 12.38           O
ATOM   5284  OW0 WAT W   4      81.210  50.505  53.418  1.00 12.48           O
ATOM   5285  OW0 WAT W   5      18.092  19.751  17.952  1.00 13.16           O
ATOM   5286  OW0 WAT W   6      78.129  41.012  53.890  1.00 13.41           O
ATOM   5287  OW0 WAT W   7      81.306  56.076  47.142  1.00 13.32           O
ATOM   5288  OW0 WAT W   8      11.893  20.570  25.469  1.00 14.06           O
ATOM   5289  OW0 WAT W   9      -2.426  22.881  11.531  1.00 14.23           O
ATOM   5290  OW0 WAT W  10      -1.267  19.759  16.839  1.00 13.86           O
ATOM   5291  OW0 WAT W  11      18.608  19.198  21.819  1.00 13.78           O
ATOM   5292  OW0 WAT W  12      88.547  50.226  37.081  1.00 14.21           O
ATOM   5293  OW0 WAT W  13      75.880  52.351  40.140  1.00 14.75           O
ATOM   5294  OW0 WAT W  14      -3.729  30.367  14.059  1.00 14.40           O
ATOM   5295  OW0 WAT W  15      91.589  46.538  41.796  1.00 15.04           O
ATOM   5296  OW0 WAT W  16      -3.671  21.503  18.469  1.00 15.32           O
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ATOM   5297  OW0 WAT W  17      79.062  48.715  52.517  1.00 15.04           O
ATOM   5298  OW0 WAT W  18       2.175  17.093  25.581  1.00 15.54           O
ATOM   5299  OW0 WAT W  19      73.198  52.473  39.528  1.00 15.46           O
ATOM   5300  OW0 WAT W  20      78.461  47.746  49.834  1.00 15.58           O
ATOM   5301  OW0 WAT W  21      82.073  54.693  40.194  1.00 15.32           O
ATOM   5302  OW0 WAT W  22      76.464  49.833  51.285  1.00 15.48           O
ATOM   5303  OW0 WAT W  23       0.721  17.028  11.027  1.00 15.78           O
ATOM   5304  OW0 WAT W  24      75.548  43.374  54.531  1.00 16.49           O
ATOM   5305  OW0 WAT W  25      75.361  34.637  50.038  1.00 15.38           O
ATOM   5306  OW0 WAT W  26      87.493  51.275  34.699  1.00 16.09           O
ATOM   5307  OW0 WAT W  27      76.610  51.276  54.441  1.00 15.92           O
ATOM   5308  OW0 WAT W  28      78.105  47.615  29.014  1.00 16.54           O
ATOM   5309  OW0 WAT W  29       4.161  33.336  13.790  1.00 16.72           O
ATOM   5310  OW0 WAT W  30       0.715  18.929  24.143  1.00 16.01           O
ATOM   5311  OW0 WAT W  31      75.699  40.905  55.224  1.00 15.75           O
ATOM   5312  OW0 WAT W  32      72.285  45.414  54.390  1.00 16.94           O
ATOM   5313  OW0 WAT W  33       8.177  22.864  29.335  1.00 16.44           O
ATOM   5314  OW0 WAT W  34      75.943  34.973  46.108  1.00 16.92           O
ATOM   5315  OW0 WAT W  35      12.402  18.231  26.887  1.00 17.33           O
ATOM   5316  OW0 WAT W  36       0.823  30.118   8.990  1.00 16.04           O
ATOM   5317  OW0 WAT W  37      81.149  44.222  57.670  1.00 17.82           O
ATOM   5318  OW0 WAT W  38      89.733  54.803  42.176  1.00 16.98           O
ATOM   5319  OW0 WAT W  39      26.067  19.553  29.823  1.00 17.33           O
ATOM   5320  OW0 WAT W  40      67.030  53.636  48.885  1.00 16.30           O
ATOM   5321  OW0 WAT W  41      76.393  45.904  49.422  1.00 17.54           O
ATOM   5322  OW0 WAT W  42      85.206  62.816  45.996  1.00 17.54           O
ATOM   5323  OW0 WAT W  43      76.471  47.028  47.000  1.00 17.44           O
ATOM   5324  OW0 WAT W  44       0.832  14.465  10.111  1.00 17.68           O
ATOM   5325  OW0 WAT W  45      17.126  39.270  29.347  1.00 17.51           O
ATOM   5326  OW0 WAT W  46      73.780  40.503  57.255  1.00 17.25           O
ATOM   5327  OW0 WAT W  47      21.723  18.784  14.274  1.00 17.45           O
ATOM   5328  OW0 WAT W  48      77.775  46.337  41.963  1.00 17.43           O
ATOM   5329  OW0 WAT W  49      74.042  51.423  47.868  1.00 17.43           O
ATOM   5330  OW0 WAT W  50       5.173  19.793  21.019  1.00 16.93           O
ATOM   5331  OW0 WAT W  51      23.296  13.219  28.911  1.00 17.88           O
ATOM   5332  OW0 WAT W  52      68.576  33.406  53.686  1.00 17.34           O
ATOM   5333  OW0 WAT W  53      79.676  60.534  56.642  1.00 17.94           O
ATOM   5334  OW0 WAT W  54      20.966  12.588  25.236  1.00 17.68           O
ATOM   5335  OW0 WAT W  55      79.455  46.852  58.012  1.00 18.46           O
ATOM   5336  OW0 WAT W  56      21.961  22.672  13.906  1.00 18.30           O
ATOM   5337  OW0 WAT W  57      23.164  37.315  22.948  1.00 18.83           O
ATOM   5338  OW0 WAT W  58      27.796  21.790  29.543  1.00 19.01           O
ATOM   5339  OW0 WAT W  59      21.970   7.754  18.732  1.00 17.60           O
ATOM   5340  OW0 WAT W  60      86.215  67.889  25.424  1.00 18.90           O
ATOM   5341  OW0 WAT W  61      74.166  48.563  46.894  1.00 17.91           O
ATOM   5342  OW0 WAT W  62      78.589  52.339  52.824  1.00 18.37           O
ATOM   5343  OW0 WAT W  63      82.800  44.837  37.893  1.00 18.85           O
ATOM   5344  OW0 WAT W  64      92.766  63.033  31.253  1.00 19.30           O
ATOM   5345  OW0 WAT W  65      76.648  25.143  57.923  1.00 18.49           O
ATOM   5346  OW0 WAT W  66      13.779  11.916  23.075  1.00 18.38           O
ATOM   5347  OW0 WAT W  67      83.618  43.219  39.903  1.00 18.64           O
ATOM   5348  OW0 WAT W  68      10.042  17.714  26.131  1.00 18.79           O
ATOM   5349  OW0 WAT W  69       8.435  26.201  11.599  1.00 18.52           O
ATOM   5350  OW0 WAT W  70      77.564  31.577  41.883  1.00 18.71           O
ATOM   5351  OW0 WAT W  71       5.877  20.685  29.317  1.00 18.50           O
ATOM   5352  OW0 WAT W  72      86.752  52.258  72.789  1.00 18.85           O
ATOM   5353  OW0 WAT W  73      20.904   8.069  26.108  1.00 18.78           O
ATOM   5354  OW0 WAT W  74      22.378  10.212  25.677  1.00 19.26           O
ATOM   5355  OW0 WAT W  75      77.680  35.889  38.422  1.00 18.55           O
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ATOM   5356  OW0 WAT W  76      88.452  62.598  22.788  1.00 19.24           O
ATOM   5357  OW0 WAT W  77      21.318  39.505  23.558  1.00 19.73           O
ATOM   5358  OW0 WAT W  78     -14.011  32.525   2.931  1.00 18.99           O
ATOM   5359  OW0 WAT W  79      78.129  62.243  54.938  1.00 18.80           O
ATOM   5360  OW0 WAT W  80       0.014  29.221   6.595  1.00 20.44           O
ATOM   5361  OW0 WAT W  81      23.996  15.750  17.833  1.00 20.07           O
ATOM   5362  OW0 WAT W  82      76.322  59.580  62.028  1.00 18.85           O
ATOM   5363  OW0 WAT W  83      72.629  47.922  53.167  1.00 19.93           O
ATOM   5364  OW0 WAT W  84      79.463  28.268  40.776  1.00 19.66           O
ATOM   5365  OW0 WAT W  85      74.825  46.354  29.274  1.00 19.67           O
ATOM   5366  OW0 WAT W  86      70.232  52.683  31.008  1.00 19.14           O
ATOM   5367  OW0 WAT W  87       5.443  16.610  15.882  1.00 20.49           O
ATOM   5368  OW0 WAT W  88      74.886  27.202  58.421  1.00 20.34           O
ATOM   5369  OW0 WAT W  89     -10.776  24.484  17.845  1.00 20.49           O
ATOM   5370  OW0 WAT W  90      20.491  12.405  31.298  1.00 19.76           O
ATOM   5371  OW0 WAT W  91      17.200  40.737  14.546  1.00 20.80           O
ATOM   5372  OW0 WAT W  92      13.133  16.256  28.864  1.00 20.36           O
ATOM   5373  OW0 WAT W  93      77.384  45.372  30.597  1.00 20.53           O
ATOM   5374  OW0 WAT W  94       1.984  14.905  18.988  1.00 20.94           O
ATOM   5375  OW0 WAT W  95     -14.038  26.920   0.625  1.00 20.67           O
ATOM   5376  OW0 WAT W  96      -7.581  18.636  28.025  1.00 20.23           O
ATOM   5377  OW0 WAT W  97      67.099  43.329  35.735  1.00 20.97           O
ATOM   5378  OW0 WAT W  98      63.796  52.216  39.947  1.00 21.26           O
ATOM   5379  OW0 WAT W  99      16.979   6.692  21.514  1.00 20.30           O
ATOM   5380  OW0 WAT W 100      88.035  52.621  25.577  1.00 20.12           O
ATOM   5381  OW0 WAT W 101       6.531  19.613  12.905  1.00 21.09           O
ATOM   5382  OW0 WAT W 102      74.606  41.058  59.683  1.00 20.58           O
ATOM   5383  OW0 WAT W 103      86.280  57.327  75.910  1.00 20.45           O
ATOM   5384  OW0 WAT W 104      85.786  61.915  22.821  1.00 20.13           O
ATOM   5385  OW0 WAT W 105      20.695  42.402  20.167  1.00 21.81           O
ATOM   5386  OW0 WAT W 106      87.016  65.242  28.514  1.00 21.68           O
ATOM   5387  OW0 WAT W 107       5.790  14.131  24.305  1.00 20.94           O
ATOM   5388  OW0 WAT W 108      73.679  27.845  51.659  1.00 20.35           O
ATOM   5389  OW0 WAT W 109      71.431  41.848  64.176  1.00 20.97           O
ATOM   5390  OW0 WAT W 110      76.779  46.335  44.417  1.00 20.12           O
ATOM   5391  OW0 WAT W 111      82.550  47.394  23.709  1.00 21.31           O
ATOM   5392  OW0 WAT W 112     -14.734  32.395   7.536  1.00 22.16           O
ATOM   5393  OW0 WAT W 113      24.029  10.879  27.547  1.00 21.29           O
ATOM   5394  OW0 WAT W 114      76.023  62.807  53.231  1.00 21.31           O
ATOM   5395  OW0 WAT W 115       8.897  11.264  16.028  1.00 22.17           O
ATOM   5396  OW0 WAT W 116      66.003  32.311  54.132  1.00 20.55           O
ATOM   5397  OW0 WAT W 117      69.194  33.931  59.941  1.00 21.61           O
ATOM   5398  OW0 WAT W 118      83.824  28.975  40.950  1.00 21.84           O
ATOM   5399  OW0 WAT W 119      72.876  46.300  46.114  1.00 21.25           O
ATOM   5400  OW0 WAT W 120      86.864  59.383  23.726  1.00 21.02           O
ATOM   5401  OW0 WAT W 121     -15.572  25.586   4.811  1.00 21.90           O
ATOM   5402  OW0 WAT W 122       8.301  14.073  25.474  1.00 21.23           O
ATOM   5403  OW0 WAT W 123      87.698  51.566  21.397  1.00 21.20           O
ATOM   5404  OW0 WAT W 124      -1.348  12.529  23.820  1.00 21.80           O
ATOM   5405  OW0 WAT W 125      68.941  31.017  57.321  1.00 21.59           O
ATOM   5406  OW0 WAT W 126      80.433  41.114  34.021  1.00 22.68           O
ATOM   5407  OW0 WAT W 127      11.397  26.193  11.415  1.00 22.37           O
ATOM   5408  OW0 WAT W 128      68.643  45.302  45.632  1.00 21.64           O
ATOM   5409  OW0 WAT W 129      80.143  43.408  40.169  1.00 21.83           O
ATOM   5410  OW0 WAT W 130       3.654  17.397  22.289  1.00 21.64           O
ATOM   5411  OW0 WAT W 131      27.369  33.046  23.038  1.00 23.05           O
ATOM   5412  OW0 WAT W 132      86.626  48.296  26.583  1.00 22.72           O
ATOM   5413  OW0 WAT W 133      83.480  64.481  44.955  1.00 23.16           O
ATOM   5414  OW0 WAT W 134      -8.973  16.987  26.256  1.00 23.30           O
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ATOM   5415  OWO WAT W 135       0.809  11.826   1.518  1.00 21.80           O
ATOM   5416  OWO WAT W 136      92.390  58.996  64.959  1.00 23.18           O
ATOM   5417  OWO WAT W 137       4.534  35.854   7.060  1.00 22.30           O
ATOM   5418  OWO WAT W 138      79.163  46.278  26.907  1.00 23.33           O
ATOM   5419  OWO WAT W 139       0.694   7.404  19.192  1.00 22.66           O
ATOM   5420  OWO WAT W 140      18.809  13.132  18.869  1.00 23.05           O
ATOM   5421  OWO WAT W 141      72.220  27.994  49.426  1.00 23.25           O
ATOM   5422  OWO WAT W 142       4.841  20.502   0.208  1.00 22.22           O
ATOM   5423  OWO WAT W 143      71.919  49.722  30.760  1.00 22.99           O
ATOM   5424  OWO WAT W 144      12.098  11.046  21.210  1.00 23.01           O
ATOM   5425  OWO WAT W 145      79.245  64.449  43.320  1.00 23.00           O
ATOM   5426  OWO WAT W 146      93.063  61.183  67.355  1.00 22.64           O
ATOM   5427  OWO WAT W 147      11.553  46.298  24.111  1.00 22.04           O
ATOM   5428  OWO WAT W 148      82.911  39.487  35.756  1.00 22.87           O
ATOM   5429  OWO WAT W 149      74.637  48.588  49.552  1.00 22.99           O
ATOM   5430  OWO WAT W 150       0.578  37.358   8.807  1.00 24.31           O
ATOM   5431  OWO WAT W 151      82.019  64.007  42.624  1.00 23.21           O
ATOM   5432  OWO WAT W 152      85.036  65.669  35.200  1.00 22.76           O
ATOM   5433  OWO WAT W 153       3.475  14.190   1.312  1.00 24.09           O
ATOM   5434  OWO WAT W 154      83.528  40.660  39.595  1.00 22.95           O
ATOM   5435  OWO WAT W 155      73.419  54.004  55.803  1.00 23.90           O
ATOM   5436  OWO WAT W 156      20.863  38.812  26.443  1.00 22.34           O
ATOM   5437  OWO WAT W 157      16.827  38.006  33.689  1.00 22.92           O
ATOM   5438  OWO WAT W 158      74.104  31.412  42.612  1.00 23.56           O
ATOM   5439  OWO WAT W 159      12.323   8.383  20.449  1.00 23.19           O
ATOM   5440  OWO WAT W 160      21.369  35.472  32.065  1.00 24.40           O
ATOM   5441  OWO WAT W 161      71.705  40.995  66.703  1.00 24.45           O
ATOM   5442  OWO WAT W 162      -5.979  37.842  28.612  1.00 24.65           O
ATOM   5443  OWO WAT W 163      72.046  44.098  47.546  1.00 23.63           O
ATOM   5444  OWO WAT W 164       5.984  18.873  17.140  1.00 23.83           O
ATOM   5445  OWO WAT W 165      70.903  29.794  46.355  1.00 23.57           O
ATOM   5446  OWO WAT W 166      10.226  38.929  28.299  1.00 23.19           O
ATOM   5447  OWO WAT W 167      81.774  28.127  39.317  1.00 23.01           O
ATOM   5448  OWO WAT W 168      95.769  49.468  36.463  1.00 24.35           O
ATOM   5449  OWO WAT W 169     -14.213  24.342   7.233  1.00 23.09           O
ATOM   5450  OWO WAT W 170      25.309  29.408  17.242  1.00 24.67           O
ATOM   5451  OWO WAT W 171       7.199  37.272  29.329  1.00 23.58           O
ATOM   5452  OWO WAT W 172      93.606  45.696  34.708  1.00 23.69           O
ATOM   5453  OWO WAT W 173       7.433  18.620  20.711  1.00 24.48           O
ATOM   5454  OWO WAT W 174      74.074  46.632  51.295  1.00 22.55           O
ATOM   5455  OWO WAT W 175      91.787  49.455  30.732  1.00 23.38           O
ATOM   5456  OWO WAT W 176      79.639  67.570  27.300  1.00 24.62           O
ATOM   5457  OWO WAT W 177       7.342  19.972   1.553  1.00 23.88           O
ATOM   5458  OWO WAT W 178      22.202   7.130  28.005  1.00 24.13           O
ATOM   5459  OWO WAT W 179      83.838  26.307  45.281  1.00 23.96           O
ATOM   5460  OWO WAT W 180      -6.270  12.318   2.985  1.00 24.29           O
ATOM   5461  OWO WAT W 181      72.112  45.217  50.025  1.00 23.42           O
ATOM   5462  OWO WAT W 182      -6.885  34.340  12.754  1.00 24.84           O
ATOM   5463  OWO WAT W 183      14.139   6.716  21.899  1.00 24.03           O
ATOM   5464  OWO WAT W 184      87.813  50.090  24.798  1.00 24.38           O
ATOM   5465  OWO WAT W 185      81.933  66.920  35.565  1.00 24.82           O
ATOM   5466  OWO WAT W 186      25.620  17.202  21.196  1.00 24.48           O
ATOM   5467  OWO WAT W 187      86.075  49.356  22.479  1.00 24.44           O
ATOM   5468  OWO WAT W 188      72.702  63.321  49.994  1.00 24.35           O
ATOM   5469  OWO WAT W 189      81.920  57.675  17.338  1.00 24.05           O
ATOM   5470  OWO WAT W 190     -17.260  27.155   6.346  1.00 23.60           O
ATOM   5471  OWO WAT W 191      -1.447  26.525  44.543  1.00 25.86           O
ATOM   5472  OWO WAT W 192      87.376  41.125  32.826  1.00 25.44           O
ATOM   5473  OWO WAT W 193       4.539  15.379  17.997  1.00 25.59           O
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ATOM   5474  OW0 WAT W 194       5.371  43.111  15.411  1.00 24.20           O
ATOM   5475  OW0 WAT W 195      25.699  18.596  23.262  1.00 25.28           O
ATOM   5476  OW0 WAT W 196      -8.314  37.998  17.944  1.00 24.46           O
ATOM   5477  OW0 WAT W 197      73.193  40.020  62.202  1.00 24.69           O
ATOM   5478  OW0 WAT W 198      18.395   5.676  28.085  1.00 24.78           O
ATOM   5479  OW0 WAT W 199      90.064  63.465  67.583  1.00 25.09           O
ATOM   5480  OW0 WAT W 200      88.914  45.770  29.800  1.00 25.04           O
ATOM   5481  OW0 WAT W 201      63.582  49.954  38.656  1.00 24.94           O
ATOM   5482  OW0 WAT W 202      76.428  68.398  60.395  1.00 24.83           O
ATOM   5483  OW0 WAT W 203      91.288  61.774  28.305  1.00 24.77           O
ATOM   5484  OW0 WAT W 204      -0.050  13.513  27.019  1.00 26.50           O
ATOM   5485  OW0 WAT W 205      64.652  31.023  52.052  1.00 25.92           O
ATOM   5486  OW0 WAT W 206      76.022  52.460  23.809  1.00 25.11           O
ATOM   5487  OW0 WAT W 207      78.488  54.816  19.424  1.00 23.62           O
ATOM   5488  OW0 WAT W 208      81.501  43.128  29.272  1.00 25.00           O
ATOM   5489  OW0 WAT W 209      16.543  48.590  19.406  1.00 25.78           O
ATOM   5490  OW0 WAT W 210      -3.946  34.269  12.357  1.00 26.09           O
ATOM   5491  OW0 WAT W 211       0.274  36.004  34.072  1.00 25.48           O
ATOM   5492  OW0 WAT W 212      -2.700  42.880  11.941  1.00 25.30           O
ATOM   5493  OW0 WAT W 213      22.253  10.326  31.624  1.00 25.92           O
ATOM   5494  OW0 WAT W 214      84.603  26.874  42.606  1.00 26.89           O
ATOM   5495  OW0 WAT W 215      64.317  34.102  55.024  1.00 25.23           O
ATOM   5496  OW0 WAT W 216     100.011  55.967  44.835  1.00 24.71           O
ATOM   5497  OW0 WAT W 217      19.449   8.432  37.301  1.00 27.30           O
ATOM   5498  OW0 WAT W 218      23.712   9.203  23.629  1.00 25.71           O
ATOM   5499  OW0 WAT W 219      16.643   5.516  31.940  1.00 26.43           O
ATOM   5500  OW0 WAT W 220      26.369  14.624  18.707  1.00 26.31           O
ATOM   5501  OW0 WAT W 221      94.635  61.074  30.648  1.00 27.32           O
ATOM   5502  OW0 WAT W 222      66.778  30.489  55.915  1.00 25.29           O
ATOM   5503  OW0 WAT W 223       8.164  19.413   5.946  1.00 26.20           O
ATOM   5504  OW0 WAT W 224      68.319  61.045  57.703  1.00 26.16           O
ATOM   5505  OW0 WAT W 225      77.614  67.608  62.700  1.00 27.09           O
ATOM   5506  OW0 WAT W 226     -13.213  23.887  21.011  1.00 25.97           O
ATOM   5507  OW0 WAT W 227      81.456  70.408  58.740  1.00 26.11           O
ATOM   5508  OW0 WAT W 228      -7.666  13.454  38.533  1.00 25.22           O
ATOM   5509  OW0 WAT W 229     -12.884  34.121   8.799  1.00 26.58           O
ATOM   5510  OW0 WAT W 230      -6.303  15.066  32.884  1.00 26.62           O
ATOM   5511  OW0 WAT W 231      24.817  36.357  21.147  1.00 27.41           O
ATOM   5512  OW0 WAT W 232      68.975  40.819  51.555  1.00 26.80           O
ATOM   5513  OW0 WAT W 233      62.632  37.812  50.828  1.00 25.32           O
ATOM   5514  OW0 WAT W 234      95.525  42.626  57.196  1.00 26.53           O
ATOM   5515  OW0 WAT W 235       8.338  47.544   8.902  1.00 27.70           O
ATOM   5516  OW0 WAT W 236     -12.390  22.508  16.772  1.00 25.11           O
ATOM   5517  OW0 WAT W 237      25.216  19.415  32.498  1.00 26.28           O
ATOM   5518  OW0 WAT W 238      92.994  63.579  33.943  1.00 26.27           O
ATOM   5519  OW0 WAT W 239      -9.096  14.877  24.581  1.00 26.39           O
ATOM   5520  OW0 WAT W 240       2.134  44.607  16.924  1.00 27.42           O
ATOM   5521  OW0 WAT W 241     -14.304  21.455   6.854  1.00 28.45           O
ATOM   5522  OW0 WAT W 242     -14.778  17.616   2.235  1.00 27.58           O
ATOM   5523  OW0 WAT W 243      66.731  32.731  60.491  1.00 26.64           O
ATOM   5524  OW0 WAT W 244      90.919  46.924  31.342  1.00 27.52           O
ATOM   5525  OW0 WAT W 245      92.157  28.892  53.486  1.00 25.99           O
ATOM   5526  OW0 WAT W 246      71.890  56.261  26.053  1.00 26.43           O
ATOM   5527  OW0 WAT W 247      83.746  35.879  35.372  1.00 27.14           O
ATOM   5528  OW0 WAT W 248      76.418  38.214  42.342  1.00 27.43           O
ATOM   5529  OW0 WAT W 249      98.151  58.311  45.251  1.00 26.58           O
ATOM   5530  OW0 WAT W 250      27.142  35.285  21.962  1.00 27.17           O
ATOM   5531  OW0 WAT W 251      93.551  54.559  39.859  1.00 26.49           O
ATOM   5532  OW0 WAT W 252      -0.494  14.603  -2.242  1.00 26.38           O
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ATOM   5533  OW0 WAT W 253      96.812  32.211  41.855  1.00 27.35           O
ATOM   5534  OW0 WAT W 254      93.676  26.381  56.065  1.00 28.27           O
ATOM   5535  OW0 WAT W 255      74.909  51.815  50.928  1.00 25.63           O
ATOM   5536  OW0 WAT W 256      10.024  30.826   4.219  1.00 26.59           O
ATOM   5537  OW0 WAT W 257      86.014  63.966  63.991  1.00 26.60           O
ATOM   5538  OW0 WAT W 258      12.077  49.872  18.447  1.00 26.99           O
ATOM   5539  OW0 WAT W 259      75.776  62.716  50.417  1.00 27.16           O
ATOM   5540  OW0 WAT W 260      -5.473   8.028  15.628  1.00 27.01           O
ATOM   5541  OW0 WAT W 261     -11.688  21.112  13.920  1.00 27.20           O
ATOM   5542  OW0 WAT W 262      18.227  47.258  17.624  1.00 26.22           O
ATOM   5543  OW0 WAT W 263      97.547  58.225  53.426  1.00 27.26           O
ATOM   5544  OW0 WAT W 264      72.217  32.324  66.479  1.00 26.58           O
ATOM   5545  OW0 WAT W 265      -9.131  14.922  21.769  1.00 27.41           O
ATOM   5546  OW0 WAT W 266      14.055   7.788  29.869  1.00 27.39           O
ATOM   5547  OW0 WAT W 267      68.295  42.968  42.880  1.00 27.61           O
ATOM   5548  OW0 WAT W 268      75.117  61.475  67.275  1.00 26.68           O
ATOM   5549  OW0 WAT W 269      80.901  66.176  32.281  1.00 27.34           O
ATOM   5550  OW0 WAT W 270      15.985  44.407  25.423  1.00 28.19           O
ATOM   5551  OW0 WAT W 271      19.315  23.186  38.541  1.00 27.36           O
ATOM   5552  OW0 WAT W 272      -3.276  13.591  -3.352  1.00 26.30           O
ATOM   5553  OW0 WAT W 273       0.048  39.687  10.019  1.00 28.77           O
ATOM   5554  OW0 WAT W 274      86.570  66.699  56.910  1.00 26.86           O
ATOM   5555  OW0 WAT W 275     101.080  43.650  42.562  1.00 26.38           O
ATOM   5556  OW0 WAT W 276       5.159  31.378   1.650  1.00 26.83           O
ATOM   5557  OW0 WAT W 277      19.344  16.162  38.243  1.00 27.08           O
ATOM   5558  OW0 WAT W 278       7.211  17.512   0.271  1.00 27.25           O
ATOM   5559  OW0 WAT W 279       7.252  41.263  28.306  1.00 29.24           O
ATOM   5560  OW0 WAT W 280      16.308  13.629  39.671  1.00 28.60           O
ATOM   5561  OW0 WAT W 281      89.287  60.284  23.945  1.00 27.52           O
ATOM   5562  OW0 WAT W 282      69.565  45.345  59.866  1.00 29.03           O
ATOM   5563  OW0 WAT W 283      -0.223  18.228  -5.027  1.00 28.14           O
ATOM   5564  OW0 WAT W 284      81.151  25.262  44.289  1.00 27.58           O
ATOM   5565  OW0 WAT W 285      99.169  32.284  40.234  1.00 29.52           O
ATOM   5566  OW0 WAT W 286      95.691  50.624  67.990  1.00 29.07           O
ATOM   5567  OW0 WAT W 287      71.579  31.121  43.880  1.00 28.01           O
ATOM   5568  OW0 WAT W 288      92.823  45.377  32.332  1.00 28.45           O
ATOM   5569  OW0 WAT W 289      27.409  27.582  17.118  1.00 27.70           O
ATOM   5570  OW0 WAT W 290      74.196  30.372  66.558  1.00 28.92           O
ATOM   5571  OW0 WAT W 291      21.518   4.520  34.959  1.00 28.60           O
ATOM   5572  OW0 WAT W 292      90.016  59.944  27.131  1.00 27.82           O
ATOM   5573  OW0 WAT W 293      85.709  39.426  33.993  1.00 29.17           O
ATOM   5574  OW0 WAT W 294      78.974  41.693  41.647  1.00 29.72           O
ATOM   5575  OW0 WAT W 295      83.350  46.101  26.137  1.00 27.64           O
ATOM   5576  OW0 WAT W 296      74.769  28.277  61.043  1.00 28.99           O
ATOM   5577  OW0 WAT W 297      14.560  16.016  33.687  1.00 28.56           O
ATOM   5578  OW0 WAT W 298      72.818  53.561  26.834  1.00 28.93           O
ATOM   5579  OW0 WAT W 299      11.256  15.993  18.588  1.00 28.72           O
ATOM   5580  OW0 WAT W 300      67.710  34.525  49.354  1.00 28.74           O
ATOM   5581  OW0 WAT W 301      99.668  41.894  55.468  1.00 28.95           O
ATOM   5582  OW0 WAT W 302      24.302  26.332  11.545  1.00 29.89           O
ATOM   5583  OW0 WAT W 303       7.963  16.898  22.507  1.00 27.32           O
ATOM   5584  OW0 WAT W 304       9.382  11.416  25.563  1.00 30.24           O
ATOM   5585  OW0 WAT W 305      93.889  57.441  40.347  1.00 29.27           O
ATOM   5586  OW0 WAT W 306       9.459  11.627  22.239  1.00 30.06           O
ATOM   5587  OW0 WAT W 307      10.938   8.887  32.504  1.00 29.53           O
ATOM   5588  OW0 WAT W 308      83.445  65.662  64.483  1.00 29.12           O
ATOM   5589  OW0 WAT W 309      -7.683  41.239  19.682  1.00 30.03           O
ATOM   5590  OW0 WAT W 310       6.408   3.672  14.244  1.00 29.77           O
ATOM   5591  OW0 WAT W 311      85.759  67.898  41.376  1.00 29.47           O
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ATOM   5592  OW0 WAT W 312       5.375  45.838  16.618  1.00 29.79           O
ATOM   5593  OW0 WAT W 313      90.650  65.026  55.548  1.00 29.64           O
ATOM   5594  OW0 WAT W 314      86.033  58.221  73.306  1.00 28.08           O
ATOM   5595  OW0 WAT W 315       8.292  18.446  18.000  1.00 29.00           O
ATOM   5596  OW0 WAT W 316     -14.813  24.393  28.372  1.00 28.95           O
ATOM   5597  OW0 WAT W 317      92.520  58.107  29.071  1.00 27.22           O
ATOM   5598  OW0 WAT W 318      65.504  41.219  58.614  1.00 29.06           O
ATOM   5599  OW0 WAT W 319      84.828  56.500  71.542  1.00 29.57           O
ATOM   5600  OW0 WAT W 320       5.085  35.318   4.526  1.00 29.30           O
ATOM   5601  OW0 WAT W 321      29.625  17.065  29.226  1.00 28.08           O
ATOM   5602  OW0 WAT W 322      92.737  59.431  38.399  1.00 29.72           O
ATOM   5603  OW0 WAT W 323      88.345  53.710  76.870  1.00 29.68           O
ATOM   5604  OW0 WAT W 324      22.819  28.744  12.621  1.00 28.61           O
ATOM   5605  OW0 WAT W 325      79.890  47.669  24.527  1.00 28.63           O
ATOM   5606  OW0 WAT W 326      17.248   5.673  24.222  1.00 28.57           O
ATOM   5607  OW0 WAT W 327      12.877  26.041   7.755  1.00 28.49           O
ATOM   5608  OW0 WAT W 328      97.306  58.698  55.730  1.00 29.97           O
ATOM   5609  OW0 WAT W 329       1.103  33.975   2.990  1.00 27.32           O
ATOM   5610  OW0 WAT W 330      95.971  29.630  41.472  1.00 30.41           O
ATOM   5611  OW0 WAT W 331      16.024  18.884  15.743  1.00 29.17           O
ATOM   5612  OW0 WAT W 332      27.809  11.157  25.200  1.00 30.61           O
ATOM   5613  OW0 WAT W 333      -1.326  42.074  32.207  1.00 29.44           O
ATOM   5614  OW0 WAT W 334      66.229  26.723  53.908  1.00 28.34           O
ATOM   5615  OW0 WAT W 335      82.875  68.031  63.132  1.00 29.46           O
ATOM   5616  OW0 WAT W 336     -12.736  25.892  19.018  1.00 28.43           O
ATOM   5617  OW0 WAT W 337     -17.566  18.438  30.318  1.00 30.00           O
ATOM   5618  OW0 WAT W 338      65.522  57.310  34.740  1.00 30.96           O
ATOM   5619  OW0 WAT W 339      -6.290   7.159  28.401  1.00 30.34           O
ATOM   5620  OW0 WAT W 340      23.527   9.034  29.711  1.00 28.94           O
ATOM   5621  OW0 WAT W 341      -0.784  26.671  -6.584  1.00 28.64           O
ATOM   5622  OW0 WAT W 342       8.616  23.088  11.577  1.00 30.35           O
ATOM   5623  OW0 WAT W 343      24.773  10.158  37.418  1.00 29.89           O
ATOM   5624  OW0 WAT W 344      72.679  55.487  52.949  1.00 31.54           O
ATOM   5625  OW0 WAT W 345      94.866  28.562  52.364  1.00 30.19           O
ATOM   5626  OW0 WAT W 346      99.204  47.352  59.959  1.00 31.06           O
ATOM   5627  OW0 WAT W 347      79.996  55.556  70.962  1.00 28.95           O
ATOM   5628  OW0 WAT W 348      76.316  21.590  51.720  1.00 29.91           O
ATOM   5629  OW0 WAT W 349       4.599  39.136   5.796  1.00 29.66           O
ATOM   5630  OW0 WAT W 350      75.589  46.881  24.460  1.00 28.94           O
ATOM   5631  OW0 WAT W 351      24.519  13.348  31.326  1.00 30.49           O
ATOM   5632  OW0 WAT W 352      75.376  63.962  27.293  1.00 30.22           O
ATOM   5633  OW0 WAT W 353       2.009  41.617  29.520  1.00 29.57           O
ATOM   5634  OW0 WAT W 354      90.628  52.219  26.037  1.00 31.09           O
ATOM   5635  OW0 WAT W 355       6.909  25.101   9.329  1.00 31.47           O
ATOM   5636  OW0 WAT W 356      -9.688   6.343  14.903  1.00 31.00           O
ATOM   5637  OW0 WAT W 357      -8.446  36.765  26.024  1.00 28.75           O
ATOM   5638  OW0 WAT W 358       1.786  15.615  22.054  1.00 30.80           O
ATOM   5639  OW0 WAT W 359       5.342  16.438  20.569  1.00 30.57           O
ATOM   5640  OW0 WAT W 360     101.587  56.705  47.092  1.00 30.70           O
ATOM   5641  OW0 WAT W 361      78.855  48.593  19.223  1.00 29.57           O
ATOM   5642  OW0 WAT W 362      72.050  54.063  62.527  1.00 29.18           O
ATOM   5643  OW0 WAT W 363      98.278  55.802  56.307  1.00 28.50           O
ATOM   5644  OW0 WAT W 364      22.116  20.797  38.337  1.00 31.08           O
ATOM   5645  OW0 WAT W 365      98.267  49.593  37.978  1.00 30.88           O
ATOM   5646  OW0 WAT W 366      89.304  41.415  70.152  1.00 29.26           O
ATOM   5647  OW0 WAT W 367      26.924  26.855  14.252  1.00 31.01           O
ATOM   5648  OW0 WAT W 368      79.838  33.248  66.816  1.00 31.71           O
ATOM   5649  OW0 WAT W 369      88.280  48.115  28.555  1.00 30.50           O
ATOM   5650  OW0 WAT W 370      88.204  31.834  63.029  1.00 33.05           O
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ATOM   5651  OW0 WAT W 371      76.513  65.078  49.599  1.00 31.02           O
ATOM   5652  OW0 WAT W 372      75.329  46.176  68.991  1.00 32.58           O
ATOM   5653  OW0 WAT W 373      -0.010  11.653  33.304  1.00 30.13           O
ATOM   5654  OW0 WAT W 374      73.773  42.211  47.287  1.00 30.75           O
ATOM   5655  OW0 WAT W 375       9.301  47.618  11.918  1.00 31.65           O
ATOM   5656  OW0 WAT W 376      77.883  66.984  50.889  1.00 28.98           O
ATOM   5657  OW0 WAT W 377      88.383  65.062  63.338  1.00 31.27           O
ATOM   5658  OW0 WAT W 378      83.213  42.295  31.445  1.00 30.26           O
ATOM   5659  OW0 WAT W 379       8.900  38.448  30.589  1.00 30.35           O
ATOM   5660  OW0 WAT W 380     -15.964  19.226   5.225  1.00 32.40           O
ATOM   5661  OW0 WAT W 381      85.952  42.207  30.510  1.00 28.58           O
ATOM   5662  OW0 WAT W 382      76.757  31.278  66.593  1.00 30.65           O
ATOM   5663  OW0 WAT W 383      67.112  43.852  61.088  1.00 31.00           O
ATOM   5664  OW0 WAT W 384      15.615  39.446   9.263  1.00 32.04           O
ATOM   5665  OW0 WAT W 385      69.642  43.139  46.873  1.00 31.22           O
ATOM   5666  OW0 WAT W 386      31.518  22.573  23.210  1.00 31.93           O
ATOM   5667  OW0 WAT W 387      63.017  32.998  57.058  1.00 32.45           O
ATOM   5668  OW0 WAT W 388     -14.772  14.046  31.412  1.00 31.27           O
ATOM   5669  OW0 WAT W 389     -13.321  20.853  36.036  1.00 32.07           O
ATOM   5670  OW0 WAT W 390      93.686  32.410  63.798  1.00 31.17           O
ATOM   5671  OW0 WAT W 391     -11.103  31.985   1.195  1.00 30.72           O
ATOM   5672  OW0 WAT W 392      97.080  54.381  67.546  1.00 30.22           O
ATOM   5673  OW0 WAT W 393      -2.111  18.265  42.480  1.00 31.18           O
ATOM   5674  OW0 WAT W 394      -5.929  23.964  40.862  1.00 30.28           O
ATOM   5675  OW0 WAT W 395      21.915  37.827  14.330  1.00 33.03           O
ATOM   5676  OW0 WAT W 396      19.319  18.346  13.246  1.00 32.13           O
ATOM   5677  OW0 WAT W 397      -9.126  31.258  -0.198  1.00 30.48           O
ATOM   5678  OW0 WAT W 398     -21.801  15.010  25.800  1.00 33.55           O
ATOM   5679  OW0 WAT W 399      -4.389  22.584  42.572  1.00 31.58           O
ATOM   5680  OW0 WAT W 400      65.696  43.778  41.962  1.00 32.13           O
ATOM   5681  OW0 WAT W 401      67.742  40.670  35.666  1.00 30.46           O
ATOM   5682  OW0 WAT W 402      65.746  65.473  48.225  1.00 32.12           O
ATOM   5683  OW0 WAT W 403      87.502  45.650  72.896  1.00 31.14           O
ATOM   5684  OW0 WAT W 404      20.347  10.990  18.557  1.00 31.27           O
ATOM   5685  OW0 WAT W 405      15.616  45.084  22.923  1.00 32.88           O
ATOM   5686  OW0 WAT W 406      -6.379  40.078  17.839  1.00 31.01           O
ATOM   5687  OW0 WAT W 407      77.148  66.360  31.211  1.00 32.64           O
ATOM   5688  OW0 WAT W 408       6.977  14.530  16.868  1.00 31.00           O
ATOM   5689  OW0 WAT W 409      78.177  42.939  37.862  1.00 32.39           O
ATOM   5690  OW0 WAT W 410      75.225  37.363  44.416  1.00 32.01           O
ATOM   5691  OW0 WAT W 411      -9.041  12.166  21.117  1.00 32.20           O
ATOM   5692  OW0 WAT W 412     -16.217  22.314   9.910  1.00 32.51           O
ATOM   5693  OW0 WAT W 413     -16.765  23.503   7.036  1.00 32.78           O
ATOM   5694  OW0 WAT W 414      69.644  27.547  47.067  1.00 31.72           O
ATOM   5695  OW0 WAT W 415     -15.707  15.702   9.582  1.00 33.06           O
ATOM   5696  OW0 WAT W 416      62.467  37.292  56.900  1.00 32.91           O
ATOM   5697  OW0 WAT W 417      73.578  56.461  55.982  1.00 31.47           O
ATOM   5698  OW0 WAT W 418      62.550  38.303  60.944  1.00 32.02           O
ATOM   5699  OW0 WAT W 419      93.690  29.703  40.077  1.00 30.62           O
ATOM   5700  OW0 WAT W 420      -2.517  30.733  48.899  1.00 31.32           O
ATOM   5701  OW0 WAT W 421      17.987  36.813  35.779  1.00 32.43           O
ATOM   5702  OW0 WAT W 422      -0.603  35.756  40.064  1.00 34.10           O
ATOM   5703  OW0 WAT W 423      10.769   6.634  30.181  1.00 32.55           O
ATOM   5704  OW0 WAT W 424      81.119  25.332  60.295  1.00 32.94           O
ATOM   5705  OW0 WAT W 425      10.855  10.621  12.982  1.00 31.60           O
ATOM   5706  OW0 WAT W 426      85.161  57.719  69.037  1.00 32.81           O
ATOM   5707  OW0 WAT W 427      89.645  64.217  61.148  1.00 34.30           O
ATOM   5708  OW0 WAT W 428      14.217   4.617  37.812  1.00 32.90           O
ATOM   5709  OW0 WAT W 429      79.717  40.252  36.441  1.00 32.15           O
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ATOM   5710  OW0 WAT W 430      96.611  39.539  56.194  1.00 32.67           O
ATOM   5711  OW0 WAT W 431      83.825  71.440  51.248  1.00 34.89           O
ATOM   5712  OW0 WAT W 432      63.076  53.522  44.892  1.00 32.71           O
ATOM   5713  OW0 WAT W 433       1.793  39.751  32.248  1.00 31.74           O
ATOM   5714  OW0 WAT W 434       7.509  15.071  20.571  1.00 32.45           O
ATOM   5715  OW0 WAT W 435      87.907  67.566  34.260  1.00 32.31           O
ATOM   5716  OW0 WAT W 436      73.062  34.735  66.838  1.00 33.20           O
ATOM   5717  OW0 WAT W 437       9.377  24.058   1.441  1.00 31.00           O
ATOM   5718  OW0 WAT W 438      71.507  59.603  32.113  1.00 33.60           O
ATOM   5719  OW0 WAT W 439       2.503   4.737   9.893  1.00 33.38           O
ATOM   5720  OW0 WAT W 440      18.348  15.377  16.447  1.00 32.53           O
ATOM   5721  OW0 WAT W 441      23.326  22.289  35.972  1.00 33.15           O
ATOM   5722  OW0 WAT W 442      96.229  51.515  70.636  1.00 34.46           O
ATOM   5723  OW0 WAT W 443      87.126  64.081  47.478  1.00 33.24           O
ATOM   5724  OW0 WAT W 444       2.034  19.051  -6.435  1.00 32.01           O
ATOM   5725  OW0 WAT W 445       5.619  39.208  30.464  1.00 32.83           O
ATOM   5726  OW0 WAT W 446      62.240  51.450  36.949  1.00 33.03           O
ATOM   5727  OW0 WAT W 447      -6.360  35.580  35.084  1.00 32.64           O
ATOM   5728  OW0 WAT W 448     -16.362  24.399  13.206  1.00 32.67           O
ATOM   5729  OW0 WAT W 449      -4.304  43.530  13.748  1.00 34.24           O
ATOM   5730  OW0 WAT W 450      73.798  51.681  25.011  1.00 30.52           O
ATOM   5731  OW0 WAT W 451     -14.918  12.722  35.144  1.00 32.68           O
ATOM   5732  OW0 WAT W 452      85.074  65.041  49.650  1.00 34.07           O
ATOM   5733  OW0 WAT W 453     -11.926  28.889  39.111  1.00 34.00           O
ATOM   5734  OW0 WAT W 454      96.844  56.355  64.597  1.00 31.66           O
ATOM   5735  OW0 WAT W 455      96.000  55.934  36.767  1.00 34.06           O
ATOM   5736  OW0 WAT W 456      71.256  69.262  41.963  1.00 31.80           O
ATOM   5737  OW0 WAT W 457       3.783  33.221   3.346  1.00 34.65           O
ATOM   5738  OW0 WAT W 458      84.579  31.320  65.966  1.00 33.69           O
ATOM   5739  OW0 WAT W 459     101.511  33.113  49.526  1.00 32.83           O
ATOM   5740  OW0 WAT W 460      95.878  33.666  64.881  1.00 33.85           O
ATOM   5741  OW0 WAT W 461      67.042  56.019  46.154  1.00 31.64           O
ATOM   5742  OW0 WAT W 462      22.413  30.668  10.728  1.00 33.39           O
ATOM   5743  OW0 WAT W 463      -9.497  10.447   8.753  1.00 35.70           O
ATOM   5744  OW0 WAT W 464      14.729  20.358  11.887  1.00 33.61           O
ATOM   5745  OW0 WAT W 465      92.689  63.328  63.676  1.00 31.71           O
ATOM   5746  OW0 WAT W 466      15.981  43.467  27.839  1.00 30.27           O
ATOM   5747  OW0 WAT W 467      16.882  39.161  12.466  1.00 33.44           O
ATOM   5748  OW0 WAT W 468      28.031  22.957  32.264  1.00 32.89           O
ATOM   5749  OW0 WAT W 469      -6.646  34.418  -1.404  1.00 36.83           O
ATOM   5750  OW0 WAT W 470     -13.840  28.684  27.438  1.00 34.43           O
ATOM   5751  OW0 WAT W 471      -2.396  37.137  36.497  1.00 34.74           O
ATOM   5752  OW0 WAT W 472       6.953  49.811   9.092  1.00 34.54           O
ATOM   5753  OW0 WAT W 473      75.076  54.086  21.905  1.00 32.21           O
ATOM   5754  OW0 WAT W 474      20.045  28.872  34.962  1.00 34.48           O
ATOM   5755  OW0 WAT W 475     100.497  60.231  49.583  1.00 33.76           O
ATOM   5756  OW0 WAT W 476      66.281  28.570  48.683  1.00 33.64           O
ATOM   5757  OW0 WAT W 477      68.813  29.894  59.688  1.00 31.09           O
ATOM   5758  OW0 WAT W 478      10.065  47.685  22.178  1.00 33.96           O
ATOM   5759  OW0 WAT W 479      12.553  46.154  27.739  1.00 33.98           O
ATOM   5760  OW0 WAT W 480      81.162  41.327  38.156  1.00 33.89           O
ATOM   5761  OW0 WAT W 481      29.486  16.634  20.506  1.00 35.11           O
ATOM   5762  OW0 WAT W 482       7.059  20.591  15.062  1.00 33.39           O
ATOM   5763  OW0 WAT W 483      94.321  48.607  31.411  1.00 32.81           O
ATOM   5764  OW0 WAT W 484      78.394  45.611  69.111  1.00 32.11           O
ATOM   5765  OW0 WAT W 485     103.001  46.778  44.265  1.00 37.49           O
ATOM   5766  OW0 WAT W 486      98.032  44.220  57.538  1.00 34.11           O
ATOM   5767  OW0 WAT W 487       6.769  35.856  36.005  1.00 34.21           O
ATOM   5768  OW0 WAT W 488      13.875   5.362  28.985  1.00 32.93           O
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ATOM   5769  OWO WAT W 489      77.757  29.704  64.840  1.00 35.79           O
ATOM   5770  OWO WAT W 490      89.374  59.183  73.080  1.00 36.26           O
ATOM   5771  OWO WAT W 491      65.505  58.340  42.785  1.00 34.38           O
ATOM   5772  OWO WAT W 492      24.675  30.016  14.680  1.00 33.91           O
ATOM   5773  OWO WAT W 493      71.773  48.416  28.198  1.00 33.25           O
ATOM   5774  OWO WAT W 494      94.516  43.259  64.022  1.00 34.72           O
ATOM   5775  OWO WAT W 495      60.811  34.614  63.880  1.00 31.02           O
ATOM   5776  OWO WAT W 496      73.777  59.268  68.651  1.00 35.19           O
ATOM   5777  OWO WAT W 497     -10.726  11.003  20.019  1.00 35.33           O
ATOM   5778  OWO WAT W 498      71.418  40.353  45.182  1.00 32.91           O
ATOM   5779  OWO WAT W 499       9.199  30.962  41.877  1.00 34.45           O
ATOM   5780  OWO WAT W 500      72.077  23.932  57.680  1.00 36.33           O
ATOM   5781  OWO WAT W 501      72.506  28.771  61.951  1.00 33.78           O
ATOM   5782  OWO WAT W 502     103.799  43.338  51.445  1.00 33.59           O
ATOM   5783  OWO WAT W 503      82.416  60.311  16.938  1.00 33.25           O
ATOM   5784  OWO WAT W 504      -3.011   7.366  27.822  1.00 34.57           O
ATOM   5785  OWO WAT W 505      -9.596  38.288   4.215  1.00 33.00           O
ATOM   5786  OWO WAT W 506      12.013  17.962   8.600  1.00 35.63           O
ATOM   5787  OWO WAT W 507     -13.941  14.680  33.978  1.00 35.53           O
ATOM   5788  OWO WAT W 508      76.322  27.722  63.060  1.00 36.69           O
ATOM   5789  OWO WAT W 509      81.219  44.657  26.709  1.00 37.06           O
ATOM   5790  OWO WAT W 510       2.548  14.368  24.152  1.00 34.66           O
ATOM   5791  OWO WAT W 511     -13.753  26.339  30.672  1.00 35.10           O
ATOM   5792  OWO WAT W 512      11.919  50.176  22.278  1.00 37.16           O
ATOM   5793  OWO WAT W 513      74.368  44.836  44.299  1.00 36.67           O
ATOM   5794  OWO WAT W 514      11.018  12.445  16.456  1.00 36.59           O
ATOM   5795  OWO WAT W 515      69.430  67.096  54.901  1.00 34.94           O
ATOM   5796  OWO WAT W 516      70.579  53.120  28.005  1.00 36.81           O
ATOM   5797  OWO WAT W 517     -19.986  22.423   9.720  1.00 35.08           O
ATOM   5798  OWO WAT W 518     -16.065  14.730  15.618  1.00 35.04           O
ATOM   5799  OWO WAT W 519      98.582  36.574  61.845  1.00 36.95           O
ATOM   5800  OWO WAT W 520     104.579  41.134  50.455  1.00 33.98           O
ATOM   5801  OWO WAT W 521      74.033  51.539  53.283  1.00 36.14           O
ATOM   5802  OWO WAT W 522      74.217  65.218  49.171  1.00 34.63           O
ATOM   5803  OWO WAT W 523      62.562  55.892  40.268  1.00 36.50           O
ATOM   5804  OWO WAT W 524      11.004  21.679  13.444  1.00 35.78           O
ATOM   5805  OWO WAT W 525      25.126  20.816  35.045  1.00 35.31           O
ATOM   5806  OWO WAT W 526       1.452   3.665  14.210  1.00 36.43           O
ATOM   5807  OWO WAT W 527      80.692  66.914  48.011  1.00 37.83           O
ATOM   5808  OWO WAT W 528      95.870  52.105  34.696  1.00 36.85           O
ATOM   5809  OWO WAT W 529      86.261  61.322  68.248  1.00 35.35           O
ATOM   5810  OWO WAT W 530      89.178  39.761  31.299  1.00 36.12           O
ATOM   5811  OWO WAT W 531      14.154  30.763   4.163  1.00 32.64           O
ATOM   5812  OWO WAT W 532      61.028  37.846  67.190  1.00 37.73           O
ATOM   5813  OWO WAT W 533      80.451  67.958  30.138  1.00 36.25           O
ATOM   5814  OWO WAT W 534     104.692  40.494  36.258  1.00 38.06           O
ATOM   5815  OWO WAT W 535      61.359  49.752  42.923  1.00 34.56           O
ATOM   5816  OWO WAT W 536     101.855  51.986  39.650  1.00 36.35           O
ATOM   5817  OWO WAT W 537      16.177  39.484   5.672  1.00 34.69           O
ATOM   5818  OWO WAT W 538      98.851  45.884  55.781  1.00 33.32           O
ATOM   5819  OWO WAT W 539      -1.538  44.304  23.105  1.00 36.19           O
ATOM   5820  OWO WAT W 540      89.539  49.486  76.110  1.00 35.64           O
ATOM   5821  OWO WAT W 541      17.816  38.933  43.133  1.00 35.39           O
ATOM   5822  OWO WAT W 542      96.229  39.789  66.441  1.00 39.58           O
ATOM   5823  OWO WAT W 543      88.906  65.280  58.671  1.00 35.15           O
ATOM   5824  OWO WAT W 544      85.813  46.260  25.593  1.00 38.20           O
ATOM   5825  OWO WAT W 545       9.797  20.449   9.200  1.00 34.22           O
ATOM   5826  OWO WAT W 546      12.525  13.782  35.553  1.00 35.17           O
ATOM   5827  OWO WAT W 547      85.180  60.452  18.548  1.00 36.21           O
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ATOM   5828  OW0 WAT W 548    -15.486  15.357  18.179  1.00 35.75           O
ATOM   5829  OW0 WAT W 549     85.633  31.453  63.091  1.00 35.06           O
ATOM   5830  OW0 WAT W 550      9.019  39.082   3.744  1.00 37.38           O
ATOM   5831  OW0 WAT W 551     89.696  29.864  62.494  1.00 34.43           O
ATOM   5832  OW0 WAT W 552     68.228  38.229  69.799  1.00 36.46           O
ATOM   5833  OW0 WAT W 553    -17.893  12.705  28.165  1.00 36.75           O
ATOM   5834  OW0 WAT W 554     68.948  49.043  66.497  1.00 37.57           O
ATOM   5835  OW0 WAT W 555     83.919  42.363  72.389  1.00 40.37           O
ATOM   5836  OW0 WAT W 556     25.314  30.611  33.086  1.00 34.52           O
ATOM   5837  OW0 WAT W 557     77.220  35.864  69.291  1.00 33.32           O
ATOM   5838  OW0 WAT W 558      2.291  37.566   6.740  1.00 36.83           O
ATOM   5839  OW0 WAT W 559     98.075  63.224  52.442  1.00 34.77           O
ATOM   5840  OW0 WAT W 560     85.352  28.871  62.439  1.00 34.82           O
ATOM   5841  OW0 WAT W 561    -11.196  16.225  -2.484  1.00 37.06           O
ATOM   5842  OW0 WAT W 562     13.081  14.249  11.142  1.00 36.06           O
ATOM   5843  OW0 WAT W 563     -8.130  34.083  10.362  1.00 38.67           O
ATOM   5844  OW0 WAT W 564    100.638  53.761  58.659  1.00 37.64           O
ATOM   5845  OW0 WAT W 565     14.411  10.706   9.080  1.00 36.65           O
ATOM   5846  OW0 WAT W 566     95.661  34.263  36.437  1.00 37.56           O
ATOM   5847  OW0 WAT W 567     -4.003  39.369  32.324  1.00 37.19           O
ATOM   5848  OW0 WAT W 568     78.167  65.509  67.240  1.00 39.89           O
ATOM   5849  OW0 WAT W 569     11.430  21.522  41.081  1.00 36.40           O
ATOM   5850  OW0 WAT W 570     91.654  35.481  69.727  1.00 37.85           O
ATOM   5851  OW0 WAT W 571     79.278  20.274  55.621  1.00 40.15           O
ATOM   5852  OW0 WAT W 572     72.304  67.008  50.584  1.00 36.29           O
ATOM   5853  OW0 WAT W 573     12.213  17.300  31.022  1.00 36.16           O
ATOM   5854  OW0 WAT W 574     11.065  42.818  30.308  1.00 36.94           O
ATOM   5855  OW0 WAT W 575    -15.594  28.700  25.166  1.00 36.91           O
ATOM   5856  OW0 WAT W 576     87.785  66.643  45.876  1.00 35.99           O
ATOM   5857  OW0 WAT W 577     82.829  61.753  68.534  1.00 34.15           O
ATOM   5858  OW0 WAT W 578     96.712  58.463  42.966  1.00 35.86           O
ATOM   5859  OW0 WAT W 579     90.547  66.319  52.850  1.00 38.01           O
ATOM   5860  OW0 WAT W 580     93.624  64.547  47.146  1.00 35.33           O
ATOM   5861  OW0 WAT W 581     63.876  47.679  34.817  1.00 38.21           O
ATOM   5862  OW0 WAT W 582      1.173  12.329  25.005  1.00 36.02           O
ATOM   5863  OW0 WAT W 583     17.049  13.321  17.022  1.00 24.70           O
ATOM   5864  OW0 WAT W 584     -2.453  39.193   5.791  1.00 34.93           O
ATOM   5865  OW0 WAT W 585     77.377  24.679  60.845  1.00 37.01           O
ATOM   5866  OW0 WAT W 586     -4.261   4.696   8.136  1.00 37.88           O
ATOM   5867  OW0 WAT W 587     72.030  20.663  48.169  1.00 32.21           O
ATOM   5868  OW0 WAT W 588    103.047  54.216  55.606  1.00 38.30           O
ATOM   5869  OW0 WAT W 589     62.056  41.403  66.235  1.00 39.59           O
ATOM   5870  OW0 WAT W 590     69.116  34.560  47.273  1.00 37.52           O
ATOM   5871  OW0 WAT W 591      5.299  26.765  -2.580  1.00 39.03           O
ATOM   5872  OW0 WAT W 592      7.851   4.451   7.230  1.00 39.90           O
ATOM   5873  OW0 WAT W 593      3.381  11.538   2.722  1.00 35.14           O
ATOM   5874  OW0 WAT W 594     70.201  61.627  59.466  1.00 37.04           O
ATOM   5875  OW0 WAT W 595    101.239  46.975  56.213  1.00 37.59           O
ATOM   5876  OW0 WAT W 596     78.651  63.616  69.537  1.00 38.62           O
ATOM   5877  OW0 WAT W 597     87.272  23.489  51.720  1.00 41.05           O
ATOM   5878  OW0 WAT W 598    -10.330  32.285  11.054  1.00 39.70           O
ATOM   5879  OW0 WAT W 599     89.287  33.132  35.384  1.00 36.85           O
ATOM   5880  OW0 WAT W 600     72.681  37.485  44.016  1.00 40.76           O
ATOM   5881  OW0 WAT W 601      6.186  21.586  -1.938  1.00 37.14           O
ATOM   5882  OW0 WAT W 602     19.150  31.374  35.226  1.00 39.73           O
ATOM   5883  OW0 WAT W 603     89.943  30.865  36.200  1.00 36.05           O
ATOM   5884  OW0 WAT W 604      6.566  14.646   0.868  1.00 39.91           O
ATOM   5885  OW0 WAT W 605    102.465  33.485  55.010  1.00 34.32           O
ATOM   5886  OW0 WAT W 606    101.894  53.829  37.270  1.00 38.18           O
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ATOM   5887  OW0 WAT W 607      87.521  28.175  42.171  1.00 37.58           O
ATOM   5888  OW0 WAT W 608      71.639  50.540  23.811  1.00 38.19           O
ATOM   5889  OW0 WAT W 609     103.850  43.189  44.252  1.00 39.03           O
ATOM   5890  OW0 WAT W 610      79.919  66.791  18.426  1.00 41.53           O
ATOM   5891  OW0 WAT W 611      22.945  32.780  14.876  1.00 34.39           O
ATOM   5892  OW0 WAT W 612      -6.425  36.916  12.432  1.00 35.27           O
ATOM   5893  OW0 WAT W 613     103.393  36.820  51.468  1.00 38.09           O
ATOM   5894  OW0 WAT W 614      84.674  36.411  69.979  1.00 36.89           O
ATOM   5895  OW0 WAT W 615      71.088  52.342  54.383  1.00 43.94           O
ATOM   5896  OW0 WAT W 616      81.351  67.541  24.003  1.00 35.74           O
ATOM   5897  OW0 WAT W 617      93.560  55.832  22.511  1.00 50.17           O
ATOM   5898  OW0 WAT W 618      84.136  69.091  49.838  1.00 41.33           O
ATOM   5899  OW0 WAT W 619      64.940  49.108  48.394  1.00 37.74           O
ATOM   5900  OW0 WAT W 620       2.665  46.841  14.692  1.00 39.07           O
ATOM   5901  OW0 WAT W 621      99.738  60.325  45.893  1.00 36.08           O
ATOM   5902  OW0 WAT W 622      86.148  29.099  38.975  1.00 34.64           O
ATOM   5903  OW0 WAT W 623      -2.502  13.269  26.328  1.00 36.55           O
ATOM   5904  OW0 WAT W 624      88.662  27.282  61.964  1.00 41.22           O
ATOM   5905  OW0 WAT W 625      14.262  15.472   7.561  1.00 37.33           O
ATOM   5906  OW0 WAT W 626      65.127  51.794  48.053  1.00 40.14           O
ATOM   5907  OW0 WAT W 627      93.290  67.912  55.616  1.00 39.49           O
ATOM   5908  OW0 WAT W 628      -3.988   9.437  35.385  1.00 40.11           O
ATOM   5909  OW0 WAT W 629      92.772  43.143  30.995  1.00 40.79           O
ATOM   5910  OW0 WAT W 630      73.931  63.142  17.034  1.00 34.53           O
ATOM   5911  OW0 WAT W 631      20.339  39.005  11.660  1.00 42.20           O
ATOM   5912  OW0 WAT W 632       4.096  21.094  45.525  1.00 31.66           O
ATOM   5913  OW0 WAT W 633      -1.502   7.283  16.652  1.00 41.72           O
ATOM   5914  OW0 WAT W 634      23.127  12.995  37.830  1.00 35.93           O
ATOM   5915  OW0 WAT W 635      20.482   6.101  32.242  1.00 38.43           O
ATOM   5916  OW0 WAT W 636     105.998  50.158  46.365  1.00 43.98           O
ATOM   5917  OW0 WAT W 637      97.647  61.168  54.360  1.00 41.64           O
ATOM   5918  OW0 WAT W 638      31.773  17.209  19.642  1.00 43.04           O
ATOM   5919  OW0 WAT W 639      95.597  47.557  33.970  1.00 39.95           O
ATOM   5920  OW0 WAT W 640      86.892  46.712  76.072  1.00 40.36           O
ATOM   5921  OW0 WAT W 641      15.550  35.912   6.020  1.00 36.75           O
ATOM   5922  OW0 WAT W 642     -15.301  21.138  -4.031  1.00 38.85           O
ATOM   5923  OW0 WAT W 643      -9.762  25.136  39.215  1.00 41.44           O
ATOM   5924  OW0 WAT W 644      90.558  58.656  75.134  1.00 46.13           O
ATOM   5925  OW0 WAT W 645      66.247  46.236  62.249  1.00 39.42           O
ATOM   5926  OW0 WAT W 646      71.142  40.474  40.944  1.00 36.49           O
ATOM   5927  OW0 WAT W 647      77.446  48.504  23.425  1.00 38.60           O
ATOM   5928  OW0 WAT W 648     104.114  48.119  59.318  1.00 37.83           O
ATOM   5929  OW0 WAT W 649     101.742  43.229  56.344  1.00 38.57           O
ATOM   5930  OW0 WAT W 650     -15.216  26.550  18.282  1.00 41.02           O
ATOM   5931  OW0 WAT W 651      81.533  73.256  58.329  1.00 43.24           O
ATOM   5932  OW0 WAT W 652      95.421  27.742  50.189  1.00 36.56           O
ATOM   5933  OW0 WAT W 653      66.407  63.471  57.158  1.00 40.06           O
ATOM   5934  OW0 WAT W 654      95.111  62.749  63.048  1.00 44.41           O
ATOM   5935  OW0 WAT W 655      74.563  73.382  48.784  1.00 38.15           O
ATOM   5936  OW0 WAT W 656     100.257  49.012  62.406  1.00 38.80           O
ATOM   5937  OW0 WAT W 657      70.436  27.659  60.745  1.00 40.98           O
ATOM   5938  OW0 WAT W 658      61.433  39.445  63.329  1.00 37.65           O
ATOM   5939  OW0 WAT W 659      70.260  64.484  61.726  1.00 36.07           O
ATOM   5940  OW0 WAT W 660      -2.658  11.192  37.261  1.00 41.10           O
ATOM   5941  OW0 WAT W 661      20.907  40.221  15.814  1.00 42.41           O
ATOM   5942  OW0 WAT W 662      70.216  52.007  62.455  1.00 42.64           O
ATOM   5943  OW0 WAT W 663      95.740  46.358  66.747  1.00 40.91           O
ATOM   5944  OW0 WAT W 664      10.857  34.594  38.679  1.00 36.48           O
ATOM   5945  OW0 WAT W 665      -6.107   5.304  14.570  1.00 39.62           O
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ATOM   5946  OW0 WAT W 666     -16.276  14.755  35.074  1.00 41.63           O
ATOM   5947  OW0 WAT W 667      26.827  31.094  30.281  1.00 45.88           O
ATOM   5948  OW0 WAT W 668      92.316  38.631  67.761  1.00 39.88           O
ATOM   5949  OW0 WAT W 669       2.195  44.374  24.480  1.00 39.74           O
ATOM   5950  OW0 WAT W 670      62.192  61.183  53.567  1.00 42.79           O
ATOM   5951  OW0 WAT W 671      -1.352  16.999  -7.023  1.00 38.41           O
ATOM   5952  OW0 WAT W 672      -8.831  10.745   6.254  1.00 40.01           O
ATOM   5953  OW0 WAT W 673      84.299  24.783  40.930  1.00 40.82           O
ATOM   5954  OW0 WAT W 674       8.890  11.430  18.541  1.00 37.72           O
ATOM   5955  OW0 WAT W 675      -2.401  37.790   8.487  1.00 46.85           O
ATOM   5956  OW0 WAT W 676       9.877  18.962  16.054  1.00 38.73           O
ATOM   5957  OW0 WAT W 677      98.749  57.708  32.395  1.00 38.75           O
ATOM   5958  OW0 WAT W 678      27.038  14.823  31.631  1.00 43.43           O
ATOM   5959  OW0 WAT W 679       5.159  44.811   2.754  1.00 42.38           O
ATOM   5960  OW0 WAT W 680       0.002  16.722  44.562  1.00 40.70           O
ATOM   5961  OW0 WAT W 681      22.123  23.904  38.391  1.00 39.40           O
ATOM   5962  OW0 WAT W 682      99.563  61.279  52.511  1.00 44.15           O
ATOM   5963  OW0 WAT W 683      -1.451  40.549   3.912  1.00 42.18           O
ATOM   5964  OW0 WAT W 684       4.221   5.039   8.017  1.00 41.21           O
ATOM   5965  OW0 WAT W 685     -22.071  15.836  29.229  1.00 44.50           O
ATOM   5966  OW0 WAT W 686      99.011  54.058  61.303  1.00 43.85           O
ATOM   5967  OW0 WAT W 687      74.967  70.644  60.446  1.00 42.55           O
ATOM   5968  OW0 WAT W 688     -10.616  31.358  36.752  1.00 41.03           O
ATOM   5969  OW0 WAT W 689     -12.072  13.240  20.060  1.00 44.10           O
ATOM   5970  OW0 WAT W 690      69.547  44.618  50.827  1.00 37.25           O
ATOM   5971  OW0 WAT W 691      86.842  68.840  47.381  1.00 37.96           O
ATOM   5972  OW0 WAT W 692      86.463  31.407  68.209  1.00 45.03           O
ATOM   5973  OW0 WAT W 693      21.528   8.241  33.245  1.00 43.60           O
ATOM   5974  OW0 WAT W 694      -6.871  42.650  13.755  1.00 44.10           O
ATOM   5975  OW0 WAT W 695      14.634  47.238  23.747  1.00 36.05           O
ATOM   5976  OW0 WAT W 696      89.838  46.959  76.362  1.00 41.33           O
ATOM   5977  OW0 WAT W 697      89.600  24.884  57.262  1.00 39.92           O
ATOM   5978  OW0 WAT W 698      90.979  50.260  28.177  1.00 41.17           O
ATOM   5979  OW0 WAT W 699      26.549  32.896  28.446  1.00 47.23           O
ATOM   5980  OW0 WAT W 700     -16.697  31.105  15.187  1.00 42.32           O
ATOM   5981  OW0 WAT W 701      81.076  69.446  26.253  1.00 34.04           O
ATOM   5982  OW0 WAT W 702      71.570  30.554  63.576  1.00 44.16           O
ATOM   5983  OW0 WAT W 703      97.303  28.496  48.839  1.00 40.54           O
ATOM   5984  OW0 WAT W 704       1.795  29.119  -5.665  1.00 33.67           O
ATOM   5985  OW0 WAT W 705      96.236  54.557  28.734  1.00 35.82           O
ATOM   5986  OW0 WAT W 706     -13.636  17.353  17.863  1.00 43.02           O
ATOM   5987  OW0 WAT W 707       7.130  10.663  31.635  1.00 40.68           O
ATOM   5988  OW0 WAT W 708      85.248  24.307  46.033  1.00 33.28           O
ATOM   5989  OW0 WAT W 709       0.838  12.439  -1.210  1.00 43.67           O
ATOM   5990  OW0 WAT W 710      -4.956  35.976  38.069  1.00 43.69           O
ATOM   5991  OW0 WAT W 711      22.149  13.931  18.661  1.00 41.93           O
ATOM   5992  OW0 WAT W 712       8.199   6.931  30.023  1.00 38.91           O
ATOM   5993  OW0 WAT W 713       2.981  30.560   0.424  1.00 39.67           O
ATOM   5994  OW0 WAT W 714       4.323  18.977  -5.385  1.00 47.90           O
ATOM   5995  OW0 WAT W 715      98.043  52.291  36.484  1.00 49.71           O
ATOM   5996  OW0 WAT W 716       3.433  37.733  33.971  1.00 42.51           O
ATOM   5997  OW0 WAT W 717      87.208  24.173  56.885  1.00 46.27           O
ATOM   5998  OW0 WAT W 718     104.443  39.753  38.813  1.00 42.75           O
ATOM   5999  OW0 WAT W 719     -17.659  30.340  10.016  1.00 43.92           O
ATOM   6000  OW0 WAT W 720       6.527  18.002  41.115  1.00 42.96           O
ATOM   6001  OW0 WAT W 721      30.110  25.949  22.723  1.00 42.22           O
ATOM   6002  OW0 WAT W 722      99.530  57.121  58.921  1.00 48.78           O
ATOM   6003  OW0 WAT W 723      95.666  32.931  39.005  1.00 41.93           O
ATOM   6004  OW0 WAT W 724      22.447  13.992  32.352  1.00 36.73           O
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ATOM   6005  OW0 WAT W 725     -12.304   5.241  21.205  1.00 42.82           O
ATOM   6006  OW0 WAT W 726      31.924  25.055  26.803  1.00 43.20           O
ATOM   6007  OW0 WAT W 727      18.724  23.829  42.625  1.00 38.81           O
ATOM   6008  OW0 WAT W 728     -15.918  22.825   4.228  1.00 42.40           O
ATOM   6009  OW0 WAT W 729      29.725  32.703  23.905  1.00 41.71           O
ATOM   6010  OW0 WAT W 730      70.143  50.223  57.006  1.00 40.87           O
ATOM   6011  OW0 WAT W 731      20.042  34.462   8.889  1.00 42.39           O
ATOM   6012  OW0 WAT W 732     101.912  41.183  29.473  1.00 44.98           O
ATOM   6013  OW0 WAT W 733      70.685  57.140  59.173  1.00 45.13           O
ATOM   6014  OW0 WAT W 734      31.199  27.580  14.855  1.00 42.48           O
ATOM   6015  OW0 WAT W 735      -8.718   8.222   9.842  1.00 38.68           O
ATOM   6016  OW0 WAT W 736      20.384  26.278  40.423  1.00 47.84           O
ATOM   6017  OW0 WAT W 737      78.929  66.905  45.969  1.00 40.33           O
ATOM   6018  OW0 WAT W 738      72.878  40.783  38.029  1.00 37.88           O
ATOM   6019  OW0 WAT W 739     -17.127  11.555  34.870  1.00 45.57           O
ATOM   6020  OW0 WAT W 740      72.198  61.923  33.145  1.00 38.23           O
ATOM   6021  OW0 WAT W 741      74.361  48.471  69.557  1.00 46.46           O
ATOM   6022  OW0 WAT W 742      70.838  21.961  53.843  1.00 38.46           O
ATOM   6023  OW0 WAT W 743      71.920  73.260  47.796  1.00 34.51           O
ATOM   6024  OW0 WAT W 744      -6.649  30.436  43.185  1.00 41.17           O
ATOM   6025  OW0 WAT W 745      12.073  41.176  33.835  1.00 37.25           O
ATOM   6026  OW0 WAT W 746       3.772  39.827  28.311  1.00 37.06           O
ATOM   6027  OW0 WAT W 747      83.695  22.688  57.551  1.00 44.64           O
ATOM   6028  OW0 WAT W 748      78.868  70.209  60.269  1.00 41.47           O
ATOM   6029  OW0 WAT W 749       2.681  11.135  29.107  1.00 45.78           O
ATOM   6030  OW0 WAT W 750      -3.851  36.672  12.548  1.00 37.71           O
ATOM   6031  OW0 WAT W 751      -5.580  38.158  34.749  1.00 41.72           O
ATOM   6032  OW0 WAT W 752     -12.061  14.443  -4.143  1.00 44.23           O
ATOM   6033  OW0 WAT W 753      74.848  71.019  57.494  1.00 39.65           O
ATOM   6034  OW0 WAT W 754      30.226  11.993  24.909  1.00 39.53           O
ATOM   6035  OW0 WAT W 755      93.979  60.877  42.464  1.00 42.70           O
ATOM   6036  OW0 WAT W 756     100.237  56.962  53.576  1.00 47.39           O
ATOM   6037  OW0 WAT W 757     -13.131  14.248  -6.671  1.00 46.71           O
ATOM   6038  OW0 WAT W 758     108.902  46.661  31.726  1.00 39.82           O
ATOM   6039  OW0 WAT W 759      12.306  29.385   6.036  1.00 39.68           O
ATOM   6040  OW0 WAT W 760      -4.770  13.938  -5.501  1.00 42.83           O
ATOM   6041  OW0 WAT W 761      71.964  54.065  57.950  1.00 55.02           O
ATOM   6042  OW0 WAT W 762      69.804  56.288  28.236  1.00 51.12           O
ATOM   6043  OW0 WAT W 763      72.043  64.834  22.297  1.00 38.68           O
ATOM   6044  OW0 WAT W 764      69.376  47.883  61.076  1.00 40.50           O
ATOM   6045  OW0 WAT W 765     -10.414  39.373  22.827  1.00 49.80           O
ATOM   6046  OW0 WAT W 766      71.511  56.324  65.919  1.00 48.05           O
ATOM   6047  OW0 WAT W 767      76.124  53.448  72.761  1.00 37.85           O
ATOM   6048  OW0 WAT W 768      10.346  15.094  16.176  1.00 45.99           O
ATOM   6049  OW0 WAT W 769      15.803  34.194   3.861  1.00 49.50           O
ATOM   6050  OW0 WAT W 770     -17.712  26.632  -2.259  1.00 45.78           O
ATOM   6051  OW0 WAT W 771      -2.116   9.781  29.937  1.00 45.05           O
ATOM   6052  OW0 WAT W 772       6.585   5.057  17.549  1.00 50.86           O
ATOM   6053  OW0 WAT W 773       0.254  30.093  -3.787  1.00 50.11           O
ATOM   6054  OW0 WAT W 774       4.530  14.340  42.939  1.00 51.12           O
ATOM   6055  OW0 WAT W 775      86.938  69.887  53.752  1.00 49.90           O
ATOM   6056  OW0 WAT W 776      67.819  39.098  38.776  1.00 44.79           O
ATOM   6057  OW0 WAT W 777      92.894  39.175  30.950  1.00 47.99           O
ATOM   6058  OW0 WAT W 778     -11.615  37.194  25.543  1.00 45.92           O
ATOM   6059  OW0 WAT W 779      13.548  43.187  32.985  1.00 48.99           O
ATOM   6060  OW0 WAT W 780      -9.029  36.912   6.899  1.00 45.44           O
ATOM   6061  OW0 WAT W 781       8.228  34.312  40.323  1.00 49.13           O
ATOM   6062  OW0 WAT W 782      -7.639  39.531  26.233  1.00 42.83           O
ATOM   6063  OW0 WAT W 783     103.282  53.320  41.696  1.00 39.23           O
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ATOM   6064  OW0 WAT W 784      79.849  68.198  63.615  1.00 49.76           O
ATOM   6065  OW0 WAT W 785      10.806  46.703  30.027  1.00 48.50           O
ATOM   6066  OW0 WAT W 786      10.278  28.104   2.256  1.00 45.08           O
ATOM   6067  OW0 WAT W 787     -12.731  22.003  19.395  1.00 50.84           O
ATOM   6068  OW0 WAT W 788      11.556  51.442  15.949  1.00 55.13           O
ATOM   6069  OW0 WAT W 789      18.137  17.684  15.574  1.00 54.06           O
ATOM   6070  OW0 WAT W 790      16.007  38.138  37.419  1.00 37.69           O
ATOM   6071  OW0 WAT W 791     107.269  39.366  40.596  1.00 42.10           O
ATOM   6072  OW0 WAT W 792      92.138  28.005  42.151  1.00 47.51           O
ATOM   6073  OW0 WAT W 793     -15.958  20.134  34.862  1.00 50.35           O
ATOM   6074  OW0 WAT W 794     105.554  44.211  46.382  1.00 43.27           O
ATOM   6075  OW0 WAT W 795      70.984  24.764  48.554  1.00 45.16           O
ATOM   6076  OW0 WAT W 796      -0.589  11.408  28.727  1.00 55.93           O
ATOM   6077  OW0 WAT W 797      -8.325  13.863   0.933  1.00 37.99           O
ATOM   6078  OW0 WAT W 798     -13.851  31.784  20.354  1.00 39.81           O
ATOM   6079  OW0 WAT W 799      77.983  26.725  66.736  1.00 42.60           O
ATOM   6080  OW0 WAT W 800     -12.394   7.735  25.189  1.00 50.65           O
ATOM   6081  OW0 WAT W 801      86.791  30.618  34.057  1.00 41.19           O
ATOM   6082  OW0 WAT W 802      10.740  12.887  19.762  1.00 34.20           O
ATOM   6083  OW0 WAT W 803       4.597  12.434  38.677  1.00 44.86           O
ATOM   6084  OW0 WAT W 804      65.489  50.372  52.067  1.00 45.48           O
ATOM   6085  OW0 WAT W 805      75.557  75.724  47.677  1.00 44.91           O
ATOM   6086  OW0 WAT W 806      99.252  56.498  61.878  1.00 45.48           O
ATOM   6087  OW0 WAT W 807      22.230  33.247  12.252  1.00 45.16           O
ATOM   6088  OW0 WAT W 808       4.275   5.280  18.625  1.00 50.93           O
ATOM   6089  OW0 WAT W 809      -2.790  38.549   3.137  1.00 48.40           O
ATOM   6090  OW0 WAT W 810      82.611  31.253  67.441  1.00 55.10           O
ATOM   6091  OW0 WAT W 811      60.665  49.734  46.321  1.00 40.99           O
ATOM   6092  OW0 WAT W 812       3.154   9.852  31.212  1.00 51.47           O
ATOM   6093  OW0 WAT W 813       2.709  29.749  -1.904  1.00 43.68           O
ATOM   6094  OW0 WAT W 814      -1.134  36.876   4.079  1.00 42.69           O
ATOM   6095  OW0 WAT W 815      67.768  52.395  54.902  1.00 47.66           O
ATOM   6096  OW0 WAT W 816      64.711  32.171  65.883  1.00 37.49           O
ATOM   6097  OW0 WAT W 817      75.140  18.625  52.961  1.00 43.29           O
ATOM   6098  OW0 WAT W 818      13.727  35.581   3.827  1.00 35.43           O
ATOM   6099  OW0 WAT W 819     107.138  47.462  48.743  1.00 47.50           O
ATOM   6100  OW0 WAT W 820       0.890  13.799  43.411  1.00 70.20           O
ATOM   6101  OW0 WAT W 821     -17.909  22.541  28.674  1.00 45.25           O
ATOM   6102  OW0 WAT W 822      62.987  48.439  32.191  1.00 49.64           O
ATOM   6103  OW0 WAT W 823      19.134  36.015   6.954  1.00 47.91           O
ATOM   6104  OW0 WAT W 824      95.386  52.724  38.315  1.00 39.06           O
ATOM   6105  OW0 WAT W 825      -4.894  43.275  26.604  1.00 38.70           O
ATOM   6106  OW0 WAT W 826      70.867  34.003  44.766  1.00 37.40           O
ATOM   6107  OW0 WAT W 827      73.436  69.331  51.280  1.00 49.45           O
ATOM   6108  OW0 WAT W 828      86.534  44.038  26.647  1.00 35.57           O
ATOM   6109  OW0 WAT W 829      70.185  51.742  58.933  1.00 48.32           O
ATOM   6110  OW0 WAT W 830      80.291  69.174  49.279  1.00 52.56           O
ATOM   6111  OW0 WAT W 831      70.714  71.457  45.425  1.00 37.69           O
ATOM   6112  OW0 WAT W 832      71.705  69.101  39.220  1.00 49.67           O
ATOM   6113  OW0 WAT W 833       3.992  22.633  -2.782  1.00 51.36           O
ATOM   6114  OW0 WAT W 834      67.983  57.801  57.503  1.00 40.80           O
ATOM   6115  OW0 WAT W 835      80.669  39.481  72.617  1.00 48.51           O
ATOM   6116  OW0 WAT W 836      68.686  48.728  55.013  1.00 55.84           O
ATOM   6117  OW0 WAT W 837      12.458  16.480  15.148  1.00 40.89           O
ATOM   6118  OW0 WAT W 838      90.722  65.542  49.220  1.00 50.70           O
ATOM   6119  OW0 WAT W 839      75.060  21.496  58.444  1.00 56.11           O
ATOM   6120  OW0 WAT W 840     103.112  46.836  52.279  1.00 37.29           O
ATOM   6121  OW0 WAT W 841       5.629  13.125  21.912  1.00 48.36           O
ATOM   6122  OW0 WAT W 842       3.750   2.529  14.238  1.00 35.83           O
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ATOM   6123  OW0 WAT W 843      96.158  41.458  31.534  1.00 48.18           O
ATOM   6124  OW0 WAT W 844      86.258  43.077  73.686  1.00 42.52           O
ATOM   6125  OW0 WAT W 845      84.232  44.670  73.912  1.00 45.77           O
ATOM   6126  OW0 WAT W 846       8.098  41.074  31.261  1.00 48.80           O
ATOM   6127  OW0 WAT W 847      20.738  14.720  16.149  1.00 39.73           O
ATOM   6128  OW0 WAT W 848      -2.346  44.407  25.480  1.00 49.90           O
ATOM   6129  OW0 WAT W 849     -15.526  22.362  -6.197  1.00 44.31           O
ATOM   6130  OW0 WAT W 850      89.590  64.098  46.869  1.00 56.09           O
ATOM   6131  OW0 WAT W 851      -3.449  43.486   5.353  1.00 41.49           O
ATOM   6132  OW0 WAT W 852      68.901  52.226  68.217  1.00 44.27           O
ATOM   6133  OW0 WAT W 853      98.320  50.981  30.117  1.00 46.85           O
ATOM   6134  OW0 WAT W 854      70.073  58.300  64.610  1.00 44.99           O
ATOM   6135  OW0 WAT W 855       4.624  47.036   1.440  1.00 42.81           O
ATOM   6136  OW0 WAT W 856      87.815  67.533  49.547  1.00 48.12           O
ATOM   6137  OW0 WAT W 857       6.013   5.658  20.716  1.00 45.71           O
ATOM   6138  OW0 WAT W 858      83.044  64.897  47.940  1.00 44.88           O
ATOM   6139  OW0 WAT W 859      -4.280  42.843   9.627  1.00 47.04           O
ATOM   6140  OW0 WAT W 860      97.665  48.641  62.942  1.00 47.67           O
ATOM   6141  OW0 WAT W 861      85.390  70.389  57.138  1.00 39.39           O
ATOM   6142  OW0 WAT W 862     -24.321  19.975  24.770  1.00 55.66           O
ATOM   6143  OW0 WAT W 863     106.910  40.893  42.688  1.00 46.05           O
ATOM   6144  OW0 WAT W 864      23.971  35.886  30.562  1.00 50.30           O
ATOM   6145  OW0 WAT W 865      88.613  34.316  71.466  1.00 52.11           O
ATOM   6146  OW0 WAT W 866      78.329  44.285  72.155  1.00 47.56           O
ATOM   6147  OW0 WAT W 867       5.442  10.717  28.127  1.00 57.69           O
ATOM   6148  OW0 WAT W 868       4.909  23.695  -5.622  1.00 40.14           O
ATOM   6149  OW0 WAT W 869      61.766  54.883  42.345  1.00 56.27           O
ATOM   6150  OW0 WAT W 870     -15.697  18.900  -6.609  1.00 48.58           O
ATOM   6151  OW0 WAT W 871      -1.994  38.190  34.240  1.00 40.58           O
ATOM   6152  OW0 WAT W 872      17.593  39.195   7.785  1.00 47.30           O
ATOM   6153  OW0 WAT W 873      -6.929   8.637  30.485  1.00 48.70           O
ATOM   6154  OW0 WAT W 874     -13.762  10.759  20.840  1.00 45.69           O
ATOM   6155  OW0 WAT W 875     106.016  45.679  51.075  1.00 52.89           O
ATOM   6156  OW0 WAT W 876      98.597  47.854  32.956  1.00 47.28           O
ATOM   6157  OW0 WAT W 877     -19.570  20.500  21.619  1.00 59.90           O
ATOM   6158  OW0 WAT W 878       4.953  51.376   4.522  1.00 49.58           O
ATOM   6159  OW0 WAT W 879      65.082  30.981  58.030  1.00 52.58           O
ATOM   6160  OW0 WAT W 880      -4.570  45.999   8.945  1.00 47.97           O
ATOM   6161  OW0 WAT W 881      71.448  72.042  52.347  1.00 48.22           O
ATOM   6162  OW0 WAT W 882      -5.192  37.121   9.739  1.00 52.84           O
ATOM   6163  OW0 WAT W 883      22.418  42.988  17.741  1.00 51.35           O
ATOM   6164  OW0 WAT W 884       1.325  32.956   0.433  1.00 51.82           O
ATOM   6165  OW0 WAT W 885      26.545  39.446  15.718  1.00 58.29           O
ATOM   6166  OW0 WAT W 886      20.591  28.184  37.538  1.00 44.12           O
ATOM   6167  OW0 WAT W 887      61.327  62.516  49.641  1.00 53.61           O
ATOM   6168  OW0 WAT W 888      18.556  37.697  46.622  1.00 40.96           O
ATOM   6169  OW0 WAT W 889      67.601  59.213  44.343  1.00 55.82           O
ATOM   6170  OW0 WAT W 890       6.062   6.589   3.745  1.00 49.33           O
ATOM   6171  OW0 WAT W 891      30.616  25.513  17.869  1.00 41.76           O
ATOM   6172  OW0 WAT W 892      30.863  14.820  21.717  1.00 43.84           O
ATOM   6173  OW0 WAT W 893      92.619  60.972  62.041  1.00 39.33           O
ATOM   6174  OW0 WAT W 894     106.528  35.567  45.737  1.00 45.09           O
ATOM   6175  OW0 WAT W 895      14.117  13.422   8.846  1.00 50.37           O
ATOM   6176  OW0 WAT W 896     -10.147  38.227  29.237  1.00 58.96           O
ATOM   6177  OW0 WAT W 897      97.900  38.773  30.904  1.00 50.37           O
ATOM   6178  OW0 WAT W 898      -8.204  21.942 -12.704  1.00 59.84           O
ATOM   6179  OW0 WAT W 899     -10.215   8.200  32.625  1.00 53.18           O
ATOM   6180  OW0 WAT W 900      69.667  48.886  31.602  1.00 47.81           O
ATOM   6181  OW0 WAT W 901      -7.032  38.633  30.903  1.00 55.74           O
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APPENDIX 2

The structural coordinated of the three-dimensional structure of the *Humicola insolens* Cel6A catalytic core domain

The structural coordinates of the *Humicola insolens* Cel6A catalytic core domain as determined by X-ray crystallography. The format of the coordinates is the conventional *Brookhaven Protein Data Bank* (PDB) format. The residue numbering follows the sequence shown in appendix 2. Only the residues from G91 to F450 are detected in the X-ray structure.

ATOM	1	N	GLY	A	91	9.828	21.757	9.329	1.00	27.61	N
ATOM	2	CA	GLY	A	91	8.961	20.868	8.549	1.00	26.62	C
ATOM	3	C	GLY	A	91	8.950	19.476	9.174	1.00	23.16	C
ATOM	4	O	GLY	A	91	8.477	18.537	8.545	1.00	27.18	O
ATOM	5	N	ASN	A	92	9.449	19.342	10.398	1.00	20.23	N
ATOM	6	CA	ASN	A	92	9.426	18.015	11.044	1.00	18.66	C
ATOM	7	C	ASN	A	92	7.990	17.624	11.337	1.00	16.69	C
ATOM	8	O	ASN	A	92	7.352	18.239	12.192	1.00	13.84	O
ATOM	9	CB	ASN	A	92	10.249	18.108	12.329	1.00	16.13	C
ATOM	10	CG	ASN	A	92	10.331	16.807	13.101	1.00	16.07	C
ATOM	11	OD1	ASN	A	92	9.705	15.808	12.762	1.00	13.45	O
ATOM	12	ND2	ASN	A	92	11.109	16.810	14.174	1.00	13.31	N
ATOM	13	N	PRO	A	93	7.470	16.551	10.744	1.00	15.88	N
ATOM	14	CA	PRO	A	93	6.110	16.099	10.975	1.00	14.91	C
ATOM	15	C	PRO	A	93	5.783	15.665	12.389	1.00	13.63	C
ATOM	16	O	PRO	A	93	4.608	15.589	12.779	1.00	11.92	O
ATOM	17	CB	PRO	A	93	5.925	14.918	10.014	1.00	15.68	C
ATOM	18	CG	PRO	A	93	7.299	14.505	9.624	1.00	16.21	C
ATOM	19	CD	PRO	A	93	8.179	15.720	9.735	1.00	14.29	C
ATOM	20	N	PHE	A	94	6.803	15.345	13.194	1.00	9.81	N
ATOM	21	CA	PHE	A	94	6.566	14.988	14.582	1.00	11.25	C
ATOM	22	C	PHE	A	94	6.440	16.220	15.475	1.00	13.53	C
ATOM	23	O	PHE	A	94	6.079	16.085	16.650	1.00	16.11	O
ATOM	24	CB	PHE	A	94	7.728	14.116	15.085	1.00	8.75	C
ATOM	25	CG	PHE	A	94	7.681	12.739	14.468	1.00	10.16	C
ATOM	26	CD1	PHE	A	94	8.194	12.506	13.205	1.00	9.57	C
ATOM	27	CD2	PHE	A	94	7.103	11.697	15.167	1.00	9.98	C
ATOM	28	CE1	PHE	A	94	8.132	11.225	12.652	1.00	9.81	C
ATOM	29	CE2	PHE	A	94	7.042	10.427	14.625	1.00	11.75	C
ATOM	30	CZ	PHE	A	94	7.559	10.193	13.361	1.00	12.26	C
ATOM	31	N	GLU	A	95	6.817	17.388	15.001	1.00	15.32	N
ATOM	32	CA	GLU	A	95	6.781	18.611	15.804	1.00	16.74	C
ATOM	33	C	GLU	A	95	5.392	19.219	15.808	1.00	16.65	C
ATOM	34	O	GLU	A	95	4.738	19.314	14.770	1.00	13.35	O
ATOM	35	CB	GLU	A	95	7.823	19.604	15.275	1.00	24.87	C
ATOM	36	CG	GLU	A	95	7.847	20.963	15.949	1.00	34.84	C
ATOM	37	CD	GLU	A	95	9.003	21.854	15.527	1.00	40.67	C
ATOM	38	OE1	GLU	A	95	9.824	21.487	14.651	1.00	42.82	O
ATOM	39	OE2	GLU	A	95	9.122	22.978	16.072	1.00	43.58	O
ATOM	40	N	GLY	A	96	4.934	19.612	17.002	1.00	17.62	N
ATOM	41	CA	GLY	A	96	3.664	20.312	17.128	1.00	17.15	C
ATOM	42	C	GLY	A	96	2.464	19.392	17.235	1.00	17.80	C
ATOM	43	O	GLY	A	96	1.321	19.849	17.105	1.00	17.14	O
ATOM	44	N	VAL	A	97	2.699	18.090	17.418	1.00	15.31	N
ATOM	45	CA	VAL	A	97	1.610	17.136	17.562	1.00	12.55	C
ATOM	46	C	VAL	A	97	1.989	16.133	18.660	1.00	14.12	C
ATOM	47	O	VAL	A	97	3.169	15.913	18.939	1.00	14.61	O
ATOM	48	CB	VAL	A	97	1.317	16.325	16.282	1.00	14.51	C
ATOM	49	CG1	VAL	A	97	0.777	17.184	15.144	1.00	11.76	C
ATOM	50	CG2	VAL	A	97	2.565	15.577	15.794	1.00	13.66	C
ATOM	51	N	GLN	A	98	0.972	15.501	19.217	1.00	11.88	N
ATOM	52	CA	GLN	A	98	1.109	14.391	20.127	1.00	16.04	C
ATOM	53	C	GLN	A	98	0.991	13.118	19.263	1.00	15.13	C

ATOM	54	O	GLN	A	98	0.281	13.150	18.250	1.00	14.70	O
ATOM	55	CB	GLN	A	98	-0.026	14.324	21.147	1.00	17.18	C
ATOM	56	CG	GLN	A	98	-0.175	15.582	21.987	1.00	21.23	C
ATOM	57	CD	GLN	A	98	-1.140	15.329	23.137	1.00	21.79	C
ATOM	58	OE1	GLN	A	98	-0.836	14.528	24.018	1.00	23.39	O
ATOM	59	NE2	GLN	A	98	-2.269	16.008	23.088	1.00	19.82	N
ATOM	60	N	LEU	A	99	1.685	12.064	19.647	1.00	13.40	N
ATOM	61	CA	LEU	A	99	1.574	10.809	18.906	1.00	12.87	C
ATOM	62	C	LEU	A	99	0.480	9.966	19.545	1.00	12.55	C
ATOM	63	O	LEU	A	99	0.562	9.745	20.743	1.00	10.08	O
ATOM	64	CB	LEU	A	99	2.929	10.095	18.888	1.00	10.90	C
ATOM	65	CG	LEU	A	99	4.041	10.857	18.146	1.00	11.33	C
ATOM	66	CD1	LEU	A	99	5.370	10.125	18.219	1.00	10.04	C
ATOM	67	CD2	LEU	A	99	3.650	11.070	16.683	1.00	8.20	C
ATOM	68	N	TRP	A	100	-0.481	9.486	18.775	1.00	9.83	N
ATOM	69	CA	TRP	A	100	-1.568	8.666	19.269	1.00	13.08	C
ATOM	70	C	TRP	A	100	-1.104	7.307	19.781	1.00	11.95	C
ATOM	71	O	TRP	A	100	-0.470	6.523	19.060	1.00	11.49	O
ATOM	72	CB	TRP	A	100	-2.567	8.424	18.127	1.00	12.95	C
ATOM	73	CG	TRP	A	100	-3.757	7.579	18.460	1.00	12.82	C
ATOM	74	CD1	TRP	A	100	-4.004	6.299	18.079	1.00	12.80	C
ATOM	75	CD2	TRP	A	100	-4.887	7.984	19.253	1.00	14.62	C
ATOM	76	NE1	TRP	A	100	-5.219	5.878	18.575	1.00	12.79	N
ATOM	77	CE2	TRP	A	100	-5.775	6.896	19.302	1.00	13.02	C
ATOM	78	CE3	TRP	A	100	-5.214	9.169	19.918	1.00	13.29	C
ATOM	79	CZ2	TRP	A	100	-6.986	6.954	19.999	1.00	15.91	C
ATOM	80	CZ3	TRP	A	100	-6.419	9.229	20.607	1.00	17.23	C
ATOM	81	CH2	TRP	A	100	-7.282	8.122	20.645	1.00	15.85	C
ATOM	82	N	ALA	A	101	-1.436	7.030	21.034	1.00	12.27	N
ATOM	83	CA	ALA	A	101	-1.158	5.728	21.649	1.00	12.90	C
ATOM	84	C	ALA	A	101	-2.456	4.940	21.451	1.00	12.69	C
ATOM	85	O	ALA	A	101	-3.483	5.283	22.046	1.00	12.00	O
ATOM	86	CB	ALA	A	101	-0.806	5.883	23.117	1.00	13.01	C
ATOM	87	N	ASN	A	102	-2.445	3.939	20.574	1.00	12.63	N
ATOM	88	CA	ASN	A	102	-3.655	3.221	20.224	1.00	13.57	C
ATOM	89	C	ASN	A	102	-4.229	2.289	21.272	1.00	16.03	C
ATOM	90	O	ASN	A	102	-3.592	1.764	22.182	1.00	13.63	O
ATOM	91	CB	ASN	A	102	-3.418	2.495	18.886	1.00	14.58	C
ATOM	92	CG	ASN	A	102	-2.484	1.298	19.075	1.00	14.01	C
ATOM	93	OD1	ASN	A	102	-2.947	0.252	19.508	1.00	12.96	O
ATOM	94	ND2	ASN	A	102	-1.211	1.454	18.763	1.00	13.58	N
ATOM	95	N	ASN	A	103	-5.523	2.011	21.085	1.00	16.33	N
ATOM	96	CA	ASN	A	103	-6.301	1.175	21.976	1.00	17.82	C
ATOM	97	C	ASN	A	103	-6.027	-0.306	21.875	1.00	17.45	C
ATOM	98	O	ASN	A	103	-6.278	-1.017	22.847	1.00	13.94	O
ATOM	99	CB	ASN	A	103	-7.803	1.460	21.751	1.00	24.29	C
ATOM	100	CG	ASN	A	103	-8.157	2.779	22.423	1.00	31.47	C
ATOM	101	OD1	ASN	A	103	-7.659	3.038	23.526	1.00	33.49	O
ATOM	102	ND2	ASN	A	103	-8.974	3.601	21.771	1.00	33.07	N
ATOM	103	N	TYR	A	104	-5.505	-0.778	20.744	1.00	17.87	N
ATOM	104	CA	TYR	A	104	-5.194	-2.202	20.629	1.00	18.15	C
ATOM	105	C	TYR	A	104	-4.025	-2.552	21.544	1.00	15.79	C
ATOM	106	O	TYR	A	104	-4.103	-3.454	22.386	1.00	16.76	O
ATOM	107	CB	TYR	A	104	-4.931	-2.573	19.167	1.00	19.04	C
ATOM	108	CG	TYR	A	104	-4.677	-4.053	18.973	1.00	20.66	C
ATOM	109	CD1	TYR	A	104	-5.726	-4.945	18.794	1.00	22.58	C
ATOM	110	CD2	TYR	A	104	-3.388	-4.549	18.963	1.00	21.13	C
ATOM	111	CE1	TYR	A	104	-5.493	-6.298	18.619	1.00	23.34	C
ATOM	112	CE2	TYR	A	104	-3.139	-5.900	18.785	1.00	21.04	C
ATOM	113	CZ	TYR	A	104	-4.193	-6.764	18.626	1.00	21.38	C
ATOM	114	OH	TYR	A	104	-3.940	-8.104	18.442	1.00	20.27	O
ATOM	115	N	TYR	A	105	-2.930	-1.798	21.435	1.00	15.57	N
ATOM	116	CA	TYR	A	105	-1.762	-2.036	22.287	1.00	14.64	C
ATOM	117	C	TYR	A	105	-2.128	-1.770	23.746	1.00	13.79	C
ATOM	118	O	TYR	A	105	-1.781	-2.574	24.612	1.00	13.07	O
ATOM	119	CB	TYR	A	105	-0.574	-1.185	21.846	1.00	12.73	C
ATOM	120	CG	TYR	A	105	0.710	-1.527	22.574	1.00	14.55	C
ATOM	121	CD1	TYR	A	105	1.532	-2.556	22.138	1.00	13.48	C
ATOM	122	CD2	TYR	A	105	1.072	-0.827	23.720	1.00	15.08	C
ATOM	123	CE1	TYR	A	105	2.711	-2.873	22.816	1.00	10.63	C
ATOM	124	CE2	TYR	A	105	2.246	-1.125	24.390	1.00	15.04	C
ATOM	125	CZ	TYR	A	105	3.054	-2.142	23.930	1.00	14.14	C

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ATOM    126  OH  TYR A 105       4.207  -2.457  24.634  1.00 13.84           O
ATOM    127  N   ARG A 106      -2.866  -0.700  24.025  1.00 12.63           N
ATOM    128  CA  ARG A 106      -3.316  -0.425  25.390  1.00 16.09           C
ATOM    129  C   ARG A 106      -4.035  -1.622  26.003  1.00 17.52           C
ATOM    130  O   ARG A 106      -3.702  -2.067  27.110  1.00 16.80           O
ATOM    131  CB  ARG A 106      -4.249   0.797  25.424  1.00 14.23           C
ATOM    132  CG  ARG A 106      -4.567   1.195  26.865  1.00 19.17           C
ATOM    133  CD  ARG A 106      -5.415   2.445  27.013  1.00 18.85           C
ATOM    134  NE  ARG A 106      -4.720   3.667  26.672  1.00 18.87           N
ATOM    135  CZ  ARG A 106      -4.661   4.258  25.485  1.00 23.19           C
ATOM    136  NH1 ARG A 106      -5.322   3.770  24.449  1.00 26.18           N
ATOM    137  NH2 ARG A 106      -3.929   5.358  25.327  1.00 25.10           N
ATOM    138  N   SER A 107      -5.012  -2.174  25.288  1.00 17.36           N
ATOM    139  CA  SER A 107      -5.770  -3.351  25.686  1.00 19.45           C
ATOM    140  C   SER A 107      -4.936  -4.610  25.883  1.00 19.71           C
ATOM    141  O   SER A 107      -5.137  -5.364  26.861  1.00 16.83           O
ATOM    142  CB  SER A 107      -6.855  -3.647  24.633  1.00 24.20           C
ATOM    143  OG  SER A 107      -7.479  -4.899  24.916  1.00 30.43           O
ATOM    144  N   GLU A 108      -3.953  -4.830  24.999  1.00 17.17           N
ATOM    145  CA  GLU A 108      -3.051  -5.962  25.193  1.00 17.05           C
ATOM    146  C   GLU A 108      -2.347  -5.819  26.541  1.00 16.74           C
ATOM    147  O   GLU A 108      -2.312  -6.777  27.306  1.00 20.10           O
ATOM    148  CB  GLU A 108      -1.994  -6.053  24.081  1.00 15.60           C
ATOM    149  CG  GLU A 108      -2.539  -6.470  22.728  1.00 15.75           C
ATOM    150  CD  GLU A 108      -1.473  -6.462  21.652  1.00 17.15           C
ATOM    151  OE1 GLU A 108      -0.860  -5.401  21.385  1.00 16.01           O
ATOM    152  OE2 GLU A 108      -1.262  -7.542  21.070  1.00 16.95           O
ATOM    153  N   VAL A 109      -1.800  -4.653  26.881  1.00 17.55           N
ATOM    154  CA  VAL A 109      -1.122  -4.525  28.167  1.00 17.37           C
ATOM    155  C   VAL A 109      -2.106  -4.680  29.328  1.00 18.11           C
ATOM    156  O   VAL A 109      -1.852  -5.452  30.262  1.00 19.67           O
ATOM    157  CB  VAL A 109      -0.377  -3.185  28.317  1.00 17.76           C
ATOM    158  CG1 VAL A 109       0.285  -3.119  29.683  1.00 17.70           C
ATOM    159  CG2 VAL A 109       0.660  -3.015  27.210  1.00 17.80           C
ATOM    160  N   HIS A 110      -3.209  -3.932  29.316  1.00 19.28           N
ATOM    161  CA  HIS A 110      -4.154  -4.021  30.427  1.00 22.54           C
ATOM    162  C   HIS A 110      -4.804  -5.379  30.605  1.00 24.72           C
ATOM    163  O   HIS A 110      -4.922  -5.839  31.750  1.00 27.30           O
ATOM    164  CB  HIS A 110      -5.219  -2.911  30.361  1.00 21.81           C
ATOM    165  CG  HIS A 110      -4.646  -1.600  30.826  1.00 25.02           C
ATOM    166  ND1 HIS A 110      -4.517  -1.286  32.161  1.00 25.96           N
ATOM    167  CD2 HIS A 110      -4.116  -0.565  30.139  1.00 23.36           C
ATOM    168  CE1 HIS A 110      -3.952  -0.097  32.277  1.00 27.07           C
ATOM    169  NE2 HIS A 110      -3.707   0.362  31.063  1.00 25.46           N
ATOM    170  N   THR A 111      -5.230  -6.044  29.547  1.00 27.02           N
ATOM    171  CA  THR A 111      -5.941  -7.306  29.635  1.00 28.01           C
ATOM    172  C   THR A 111      -5.064  -8.547  29.590  1.00 29.56           C
ATOM    173  O   THR A 111      -5.390  -9.550  30.237  1.00 27.25           O
ATOM    174  CB  THR A 111      -6.979  -7.396  28.490  1.00 28.98           C
ATOM    175  OG1 THR A 111      -7.849  -6.255  28.515  1.00 32.65           O
ATOM    176  CG2 THR A 111      -7.817  -8.654  28.631  1.00 30.57           C
ATOM    177  N   LEU A 112      -3.959  -8.518  28.832  1.00 27.67           N
ATOM    178  CA  LEU A 112      -3.106  -9.700  28.766  1.00 26.67           C
ATOM    179  C   LEU A 112      -1.926  -9.674  29.718  1.00 26.00           C
ATOM    180  O   LEU A 112      -1.683 -10.667  30.417  1.00 27.00           O
ATOM    181  CB  LEU A 112      -2.640  -9.915  27.316  1.00 26.49           C
ATOM    182  CG  LEU A 112      -3.744  -9.881  26.262  1.00 26.08           C
ATOM    183  CD1 LEU A 112      -3.188 -10.032  24.850  1.00 23.69           C
ATOM    184  CD2 LEU A 112      -4.775 -10.977  26.535  1.00 26.41           C
ATOM    185  N   ALA A 113      -1.220  -8.559  29.836  1.00 25.53           N
ATOM    186  CA  ALA A 113      -0.018  -8.486  30.657  1.00 24.31           C
ATOM    187  C   ALA A 113      -0.191  -8.212  32.139  1.00 23.97           C
ATOM    188  O   ALA A 113       0.260  -8.970  33.009  1.00 22.26           O
ATOM    189  CB  ALA A 113       0.899  -7.392  30.084  1.00 23.61           C
ATOM    190  N   ILE A 114      -0.831  -7.080  32.461  1.00 22.40           N
ATOM    191  CA  ILE A 114      -0.940  -6.637  33.839  1.00 23.74           C
ATOM    192  C   ILE A 114      -1.503  -7.677  34.785  1.00 26.57           C
ATOM    193  O   ILE A 114      -0.851  -7.946  35.798  1.00 25.46           O
ATOM    194  CB  ILE A 114      -1.633  -5.278  33.976  1.00 21.40           C
ATOM    195  CG1 ILE A 114      -0.711  -4.203  33.390  1.00 16.26           C
ATOM    196  CG2 ILE A 114      -1.961  -4.951  35.430  1.00 19.78           C
ATOM    197  CD1 ILE A 114      -1.313  -2.817  33.321  1.00 21.39           C
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ATOM    198  N   PRO A 115      -2.603  -8.340  34.475  1.00 30.09           N
ATOM    199  CA  PRO A 115      -3.163  -9.372  35.330  1.00 34.92           C
ATOM    200  C   PRO A 115      -2.175 -10.418  35.811  1.00 40.86           C
ATOM    201  O   PRO A 115      -2.276 -10.899  36.945  1.00 41.94           O
ATOM    202  CB  PRO A 115      -4.255  -9.993  34.464  1.00 34.42           C
ATOM    203  CG  PRO A 115      -4.684  -8.899  33.548  1.00 32.96           C
ATOM    204  CD  PRO A 115      -3.440  -8.094  33.276  1.00 30.71           C
ATOM    205  N   GLN A 116      -1.190 -10.794  35.004  1.00 45.84           N
ATOM    206  CA  GLN A 116      -0.168 -11.761  35.330  1.00 49.55           C
ATOM    207  C   GLN A 116       1.065 -11.195  36.022  1.00 50.64           C
ATOM    208  O   GLN A 116       1.982 -11.971  36.327  1.00 52.61           O
ATOM    209  CB  GLN A 116       0.321 -12.436  34.038  1.00 53.69           C
ATOM    210  CG  GLN A 116      -0.768 -12.787  33.044  1.00 56.00           C
ATOM    211  CD  GLN A 116      -1.650 -13.931  33.495  1.00 59.17           C
ATOM    212  OE1 GLN A 116      -2.844 -13.948  33.177  1.00 60.02           O
ATOM    213  NE2 GLN A 116      -1.079 -14.893  34.218  1.00 58.44           N
ATOM    214  N   ILE A 117       1.153  -9.895  36.263  1.00 49.79           N
ATOM    215  CA  ILE A 117       2.359  -9.340  36.897  1.00 48.90           C
ATOM    216  C   ILE A 117       2.173  -9.200  38.403  1.00 48.85           C
ATOM    217  O   ILE A 117       1.240  -8.546  38.878  1.00 47.80           O
ATOM    218  CB  ILE A 117       2.707  -7.969  36.257  1.00 48.99           C
ATOM    219  CG1 ILE A 117       3.093  -8.201  34.774  1.00 49.40           C
ATOM    220  CG2 ILE A 117       3.925  -7.366  36.972  1.00 49.20           C
ATOM    221  CD1 ILE A 117       3.081  -6.933  33.936  1.00 49.29           C
ATOM    222  N   THR A 118       3.081  -9.830  39.155  1.00 46.94           N
ATOM    223  CA  THR A 118       2.965  -9.779  40.610  1.00 45.80           C
ATOM    224  C   THR A 118       3.655  -8.550  41.170  1.00 45.43           C
ATOM    225  O   THR A 118       3.100  -7.895  42.047  1.00 46.96           O
ATOM    226  CB  THR A 118       3.428 -11.069  41.317  1.00 46.82           C
ATOM    227  OG1 THR A 118       4.776 -11.411  41.099  1.00 46.50           O
ATOM    228  CG2 THR A 118       2.577 -12.229  40.772  1.00 44.46           C
ATOM    229  N   ASP A 119       4.845  -8.222  40.697  1.00 44.01           N
ATOM    230  CA  ASP A 119       5.550  -7.055  41.219  1.00 43.17           C
ATOM    231  C   ASP A 119       4.710  -5.802  41.052  1.00 41.01           C
ATOM    232  O   ASP A 119       4.392  -5.416  39.925  1.00 39.94           O
ATOM    233  CB  ASP A 119       6.870  -6.900  40.457  1.00 46.99           C
ATOM    234  CG  ASP A 119       7.907  -6.098  41.205  1.00 49.42           C
ATOM    235  OD1 ASP A 119       7.579  -5.155  41.952  1.00 52.21           O
ATOM    236  OD2 ASP A 119       9.104  -6.434  41.035  1.00 51.58           O
ATOM    237  N   PRO A 120       4.452  -5.090  42.142  1.00 39.04           N
ATOM    238  CA  PRO A 120       3.724  -3.834  42.086  1.00 36.91           C
ATOM    239  C   PRO A 120       4.446  -2.802  41.227  1.00 35.45           C
ATOM    240  O   PRO A 120       3.810  -2.032  40.508  1.00 33.13           O
ATOM    241  CB  PRO A 120       3.592  -3.389  43.528  1.00 37.45           C
ATOM    242  CG  PRO A 120       4.443  -4.278  44.352  1.00 37.57           C
ATOM    243  CD  PRO A 120       4.841  -5.463  43.521  1.00 38.90           C
ATOM    244  N   ALA A 121       5.770  -2.776  41.298  1.00 34.03           N
ATOM    245  CA  ALA A 121       6.612  -1.876  40.528  1.00 32.17           C
ATOM    246  C   ALA A 121       6.511  -2.197  39.042  1.00 29.70           C
ATOM    247  O   ALA A 121       6.338  -1.288  38.233  1.00 31.94           O
ATOM    248  CB  ALA A 121       8.068  -1.972  40.969  1.00 34.01           C
ATOM    249  N   LEU A 122       6.548  -3.480  38.683  1.00 26.92           N
ATOM    250  CA  LEU A 122       6.351  -3.864  37.296  1.00 26.18           C
ATOM    251  C   LEU A 122       4.944  -3.511  36.812  1.00 25.84           C
ATOM    252  O   LEU A 122       4.805  -3.163  35.634  1.00 21.96           O
ATOM    253  CB  LEU A 122       6.640  -5.336  37.038  1.00 26.91           C
ATOM    254  CG  LEU A 122       8.108  -5.769  37.001  1.00 27.40           C
ATOM    255  CD1 LEU A 122       8.189  -7.241  36.625  1.00 29.77           C
ATOM    256  CD2 LEU A 122       8.910  -4.923  36.020  1.00 28.91           C
ATOM    257  N   ARG A 123       3.923  -3.611  37.671  1.00 23.27           N
ATOM    258  CA  ARG A 123       2.574  -3.278  37.254  1.00 23.17           C
ATOM    259  C   ARG A 123       2.428  -1.802  36.911  1.00 22.59           C
ATOM    260  O   ARG A 123       1.844  -1.448  35.887  1.00 21.89           O
ATOM    261  CB  ARG A 123       1.522  -3.583  38.319  1.00 22.73           C
ATOM    262  CG  ARG A 123       1.114  -5.044  38.379  1.00 24.61           C
ATOM    263  CD  ARG A 123      -0.281  -5.084  39.056  1.00 21.93           C
ATOM    264  NE  ARG A 123      -0.674  -6.472  39.087  1.00 22.49           N
ATOM    265  CZ  ARG A 123      -1.896  -6.959  38.970  1.00 21.33           C
ATOM    266  NH1 ARG A 123      -2.921  -6.135  38.827  1.00 17.12           N
ATOM    267  NH2 ARG A 123      -1.990  -8.282  39.016  1.00 23.60           N
ATOM    268  N   ALA A 124       2.932  -0.947  37.801  1.00 22.35           N
ATOM    269  CA  ALA A 124       2.879   0.486  37.574  1.00 22.62           C
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ATOM    270  C   ALA A 124       3.631   0.867  36.293  1.00 22.96           C
ATOM    271  O   ALA A 124       3.219   1.765  35.557  1.00 22.62           O
ATOM    272  CB  ALA A 124       3.479   1.237  38.766  1.00 25.24           C
ATOM    273  N   ALA A 125       4.744   0.194  36.020  1.00 21.29           N
ATOM    274  CA  ALA A 125       5.526   0.460  34.821  1.00 22.37           C
ATOM    275  C   ALA A 125       4.780  -0.052  33.594  1.00 21.22           C
ATOM    276  O   ALA A 125       4.739   0.642  32.568  1.00 20.55           O
ATOM    277  CB  ALA A 125       6.917  -0.142  34.974  1.00 21.61           C
ATOM    278  N   ALA A 126       4.072  -1.174  33.716  1.00 16.70           N
ATOM    279  CA  ALA A 126       3.285  -1.695  32.600  1.00 16.03           C
ATOM    280  C   ALA A 126       2.168  -0.718  32.228  1.00 16.88           C
ATOM    281  O   ALA A 126       1.894  -0.493  31.048  1.00 14.78           O
ATOM    282  CB  ALA A 126       2.685  -3.048  32.933  1.00 13.36           C
ATOM    283  N   SER A 127       1.521  -0.113  33.226  1.00 16.69           N
ATOM    284  CA  SER A 127       0.485   0.884  32.968  1.00 18.32           C
ATOM    285  C   SER A 127       1.084   2.042  32.171  1.00 16.53           C
ATOM    286  O   SER A 127       0.373   2.585  31.322  1.00 18.15           O
ATOM    287  CB  SER A 127      -0.188   1.369  34.261  1.00 22.44           C
ATOM    288  OG ASER A 127      -0.899   0.330  34.893  0.50 29.80           O
ATOM   2830  OG BSER A 127      -1.331   2.154  33.971  0.50 21.53           O
ATOM    289  N   ALA A 128       2.294   2.473  32.496  1.00 13.16           N
ATOM    290  CA  ALA A 128       2.912   3.582  31.783  1.00 12.91           C
ATOM    291  C   ALA A 128       3.262   3.233  30.340  1.00 13.03           C
ATOM    292  O   ALA A 128       3.021   4.030  29.407  1.00 12.54           O
ATOM    293  CB  ALA A 128       4.130   4.062  32.554  1.00 13.61           C
ATOM    294  N   VAL A 129       3.801   2.045  30.104  1.00 12.24           N
ATOM    295  CA  VAL A 129       4.162   1.543  28.787  1.00 13.46           C
ATOM    296  C   VAL A 129       2.926   1.449  27.888  1.00 15.33           C
ATOM    297  O   VAL A 129       3.004   1.619  26.673  1.00 13.42           O
ATOM    298  CB  VAL A 129       4.800   0.134  28.822  1.00 15.74           C
ATOM    299  CG1 VAL A 129       5.053  -0.415  27.423  1.00 21.31           C
ATOM    300  CG2 VAL A 129       6.116   0.115  29.582  1.00 20.61           C
ATOM    301  N   ALA A 130       1.756   1.188  28.469  1.00 16.19           N
ATOM    302  CA  ALA A 130       0.500   1.091  27.750  1.00 17.34           C
ATOM    303  C   ALA A 130       0.140   2.374  27.011  1.00 16.78           C
ATOM    304  O   ALA A 130      -0.623   2.364  26.036  1.00 19.11           O
ATOM    305  CB  ALA A 130      -0.620   0.704  28.713  1.00 14.76           C
ATOM    306  N   GLU A 131       0.616   3.509  27.490  1.00 13.17           N
ATOM    307  CA  GLU A 131       0.387   4.814  26.930  1.00 14.63           C
ATOM    308  C   GLU A 131       1.484   5.274  25.975  1.00 13.20           C
ATOM    309  O   GLU A 131       1.331   6.391  25.480  1.00 14.75           O
ATOM    310  CB  GLU A 131       0.214   5.864  28.047  1.00 14.20           C
ATOM    311  CG  GLU A 131      -0.804   5.390  29.101  1.00 16.67           C
ATOM    312  CD  GLU A 131      -2.191   5.251  28.492  1.00 17.68           C
ATOM    313  OE1 GLU A 131      -2.549   6.169  27.715  1.00 16.62           O
ATOM    314  OE2 GLU A 131      -2.890   4.265  28.795  1.00 18.66           O
ATOM    315  N   VAL A 132       2.538   4.512  25.741  1.00 11.88           N
ATOM    316  CA  VAL A 132       3.603   4.952  24.822  1.00 11.08           C
ATOM    317  C   VAL A 132       3.135   4.692  23.394  1.00 11.44           C
ATOM    318  O   VAL A 132       2.668   3.588  23.097  1.00 13.60           O
ATOM    319  CB  VAL A 132       4.907   4.193  25.123  1.00 11.89           C
ATOM    320  CG1 VAL A 132       6.018   4.587  24.167  1.00  8.60           C
ATOM    321  CG2 VAL A 132       5.390   4.506  26.543  1.00 10.07           C
ATOM    322  N   PRO A 133       3.122   5.711  22.555  1.00 11.44           N
ATOM    323  CA  PRO A 133       2.549   5.627  21.221  1.00 10.93           C
ATOM    324  C   PRO A 133       3.425   4.887  20.236  1.00 11.01           C
ATOM    325  O   PRO A 133       4.486   5.413  19.901  1.00 13.15           O
ATOM    326  CB  PRO A 133       2.382   7.091  20.847  1.00 11.30           C
ATOM    327  CG  PRO A 133       3.475   7.826  21.566  1.00 14.33           C
ATOM    328  CD  PRO A 133       3.628   7.078  22.871  1.00 13.04           C
ATOM    329  N   SER A 134       3.040   3.701  19.796  1.00  9.43           N
ATOM    330  CA  SER A 134       3.825   2.928  18.845  1.00  9.61           C
ATOM    331  C   SER A 134       3.095   2.858  17.506  1.00  9.08           C
ATOM    332  O   SER A 134       1.886   3.119  17.451  1.00  7.95           O
ATOM    333  CB  SER A 134       4.090   1.508  19.364  1.00 11.46           C
ATOM    334  OG  SER A 134       2.893   0.905  19.850  1.00  9.22           O
ATOM    335  N   PHE A 135       3.804   2.513  16.435  1.00  7.57           N
ATOM    336  CA  PHE A 135       3.157   2.391  15.122  1.00  6.79           C
ATOM    337  C   PHE A 135       2.172   1.234  15.076  1.00  7.10           C
ATOM    338  O   PHE A 135       2.370   0.257  15.810  1.00  6.61           O
ATOM    339  CB  PHE A 135       4.240   2.198  14.047  1.00  6.80           C
ATOM    340  CG  PHE A 135       4.901   3.451  13.541  1.00  8.54           C
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	ATOM	341	CD1	PHE	A	135	5.742	4.230	14.318	1.00	7.25	C
	ATOM	342	CD2	PHE	A	135	4.669	3.849	12.227	1.00	8.57	C
	ATOM	343	CE1	PHE	A	135	6.329	5.368	13.811	1.00	6.65	C
	ATOM	344	CE2	PHE	A	135	5.247	4.983	11.706	1.00	7.30	C
	ATOM	345	CZ	PHE	A	135	6.079	5.765	12.505	1.00	8.25	C
	ATOM	346	N	GLN	A	136	1.200	1.181	14.163	1.00	8.59	N
	ATOM	347	CA	GLN	A	136	0.314	0.072	13.882	1.00	7.41	C
	ATOM	348	C	GLN	A	136	0.533	-0.390	12.449	1.00	8.09	C
	ATOM	349	O	GLN	A	136	0.975	0.452	11.680	1.00	9.99	O
	ATOM	350	CB	GLN	A	136	-1.133	0.533	14.041	1.00	8.77	C
	ATOM	351	CG	GLN	A	136	-1.414	0.850	15.526	1.00	8.45	C
	ATOM	352	CD	GLN	A	136	-2.881	1.260	15.641	1.00	9.06	C
	ATOM	353	OE1	GLN	A	136	-3.276	2.356	15.230	1.00	13.11	O
	ATOM	354	NE2	GLN	A	136	-3.625	0.336	16.178	1.00	10.30	N
	ATOM	355	N	TRP	A	137	0.466	-1.677	12.180	1.00	8.68	N
	ATOM	356	CA	TRP	A	137	0.915	-2.150	10.884	1.00	8.62	C
	ATOM	357	C	TRP	A	137	-0.191	-2.564	9.948	1.00	7.64	C
	ATOM	358	O	TRP	A	137	-1.013	-3.398	10.316	1.00	8.36	O
	ATOM	359	CB	TRP	A	137	1.824	-3.349	11.237	1.00	7.40	C
	ATOM	360	CG	TRP	A	137	3.105	-2.973	11.930	1.00	9.26	C
	ATOM	361	CD1	TRP	A	137	3.286	-2.305	13.106	1.00	9.31	C
	ATOM	362	CD2	TRP	A	137	4.420	-3.292	11.476	1.00	6.21	C
	ATOM	363	NE1	TRP	A	137	4.621	-2.162	13.414	1.00	8.45	N
	ATOM	364	CE2	TRP	A	137	5.335	-2.772	12.426	1.00	8.77	C
	ATOM	365	CE3	TRP	A	137	4.916	-3.979	10.357	1.00	10.04	C
	ATOM	366	CZ2	TRP	A	137	6.720	-2.902	12.307	1.00	8.70	C
	ATOM	367	CZ3	TRP	A	137	6.302	-4.097	10.235	1.00	8.51	C
	ATOM	368	CH2	TRP	A	137	7.161	-3.571	11.205	1.00	7.62	C
	ATOM	369	N	LEU	A	138	-0.086	-2.138	8.689	1.00	6.71	N
	ATOM	370	CA	LEU	A	138	-1.011	-2.672	7.669	1.00	7.17	C
	ATOM	371	C	LEU	A	138	-0.235	-3.793	6.979	1.00	6.99	C
	ATOM	372	O	LEU	A	138	0.173	-3.705	5.828	1.00	6.77	O
	ATOM	373	CB	LEU	A	138	-1.459	-1.602	6.685	1.00	8.93	C
	ATOM	374	CG	LEU	A	138	-1.894	-0.268	7.300	1.00	6.21	C
	ATOM	375	CD1	LEU	A	138	-2.279	0.680	6.146	1.00	6.42	C
	ATOM	376	CD2	LEU	A	138	-3.057	-0.459	8.260	1.00	8.15	C
	ATOM	377	N	ASP	A	139	-0.070	-4.895	7.720	1.00	7.95	N
	ATOM	378	CA	ASP	A	139	0.735	-6.017	7.251	1.00	8.19	C
	ATOM	379	C	ASP	A	139	-0.084	-7.090	6.568	1.00	8.76	C
	ATOM	380	O	ASP	A	139	0.469	-8.089	6.083	1.00	7.32	O
	ATOM	381	CB	ASP	A	139	1.524	-6.582	8.447	1.00	12.08	C
	ATOM	382	CG	ASP	A	139	0.609	-7.212	9.478	1.00	14.55	C
	ATOM	383	OD1	ASP	A	139	-0.510	-6.736	9.703	1.00	14.60	O
	ATOM	384	OD2	ASP	A	139	1.032	-8.226	10.067	1.00	22.92	O
	ATOM	385	N	ARG	A	140	-1.393	-6.858	6.496	1.00	6.66	N
	ATOM	386	CA	ARG	A	140	-2.339	-7.713	5.806	1.00	8.02	C
	ATOM	387	C	ARG	A	140	-3.390	-6.789	5.177	1.00	8.44	C
	ATOM	388	O	ARG	A	140	-3.736	-5.759	5.755	1.00	10.03	O
	ATOM	389	CB	ARG	A	140	-3.085	-8.676	6.727	1.00	14.54	C
	ATOM	390	CG	ARG	A	140	-2.369	-9.962	7.108	1.00	21.01	C
	ATOM	391	CD	ARG	A	140	-2.810	-10.380	8.518	1.00	26.38	C
	ATOM	392	NE	ARG	A	140	-2.423	-9.344	9.477	1.00	25.95	N
	ATOM	393	CZ	ARG	A	140	-3.224	-8.786	10.378	1.00	27.50	C
	ATOM	394	NH1	ARG	A	140	-4.503	-9.156	10.464	1.00	24.37	N
	ATOM	395	NH2	ARG	A	140	-2.714	-7.848	11.169	1.00	26.06	N
	ATOM	396	N	ASN	A	141	-3.891	-7.143	4.011	1.00	7.01	N
	ATOM	397	CA	ASN	A	141	-4.890	-6.359	3.301	1.00	7.11	C
	ATOM	398	C	ASN	A	141	-6.119	-6.052	4.142	1.00	7.69	C
	ATOM	399	O	ASN	A	141	-6.718	-4.960	4.039	1.00	5.66	O
	ATOM	400	CB	ASN	A	141	-5.253	-7.072	1.984	1.00	8.96	C
	ATOM	401	CG	ASN	A	141	-6.154	-6.226	1.085	1.00	10.45	C
	ATOM	402	OD1	ASN	A	141	-5.846	-5.034	0.880	1.00	7.27	O
	ATOM	403	ND2	ASN	A	141	-7.223	-6.834	0.569	1.00	8.87	N
	ATOM	404	N	VAL	A	142	-6.547	-6.985	4.989	1.00	7.41	N
	ATOM	405	CA	VAL	A	142	-7.727	-6.810	5.832	1.00	9.96	C
	ATOM	406	C	VAL	A	142	-7.616	-5.666	6.818	1.00	8.09	C
	ATOM	407	O	VAL	A	142	-8.642	-5.128	7.251	1.00	9.90	O
	ATOM	408	CB	VAL	A	142	-8.057	-8.122	6.577	1.00	12.41	C
	ATOM	409	CG1	VAL	A	142	-7.037	-8.366	7.688	1.00	14.72	C
	ATOM	410	CG2	VAL	A	142	-9.473	-8.091	7.129	1.00	15.00	C
	ATOM	411	N	THR	A	143	-6.408	-5.206	7.181	1.00	8.26	N
	ATOM	412	CA	THR	A	143	-6.245	-4.077	8.090	1.00	7.37	C

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ATOM    413  C   THR A 143      -6.655  -2.742   7.471  1.00  8.31           C
ATOM    414  O   THR A 143      -6.899  -1.791   8.214  1.00  8.19           O
ATOM    415  CB  THR A 143      -4.765  -3.917   8.541  1.00  7.79           C
ATOM    416  OG1 THR A 143      -3.960  -3.639   7.385  1.00  8.04           O
ATOM    417  CG2 THR A 143      -4.277  -5.213   9.187  1.00  7.60           C
ATOM    418  N   VAL A 144      -6.684  -2.611   6.143  1.00  8.65           N
ATOM    419  CA  VAL A 144      -6.965  -1.313   5.511  1.00  7.32           C
ATOM    420  C   VAL A 144      -8.367  -0.798   5.834  1.00  8.88           C
ATOM    421  O   VAL A 144      -8.533   0.335   6.267  1.00  8.24           O
ATOM    422  CB  VAL A 144      -6.764  -1.432   3.995  1.00  5.69           C
ATOM    423  CG1 VAL A 144      -7.176  -0.172   3.234  1.00  6.76           C
ATOM    424  CG2 VAL A 144      -5.299  -1.737   3.659  1.00  6.96           C
ATOM    425  N   ASP A 145      -9.415  -1.614   5.663  1.00  7.58           N
ATOM    426  CA  ASP A 145     -10.790  -1.172   5.925  1.00  8.56           C
ATOM    427  C   ASP A 145     -11.217  -1.428   7.358  1.00  8.48           C
ATOM    428  O   ASP A 145     -12.375  -1.268   7.765  1.00  8.12           O
ATOM    429  CB  ASP A 145     -11.768  -1.844   4.961  1.00 10.52           C
ATOM    430  CG  ASP A 145     -11.807  -1.217   3.589  1.00 12.26           C
ATOM    431  OD1 ASP A 145     -11.524  -0.004   3.452  1.00 11.52           O
ATOM    432  OD2 ASP A 145     -12.185  -1.921   2.626  1.00 13.96           O
ATOM    433  N   THR A 146     -10.255  -1.842   8.199  1.00  9.54           N
ATOM    434  CA  THR A 146     -10.525  -2.084   9.611  1.00  7.82           C
ATOM    435  C   THR A 146      -9.638  -1.204  10.486  1.00  8.67           C
ATOM    436  O   THR A 146      -9.993  -0.061  10.796  1.00  8.39           O
ATOM    437  CB  THR A 146     -10.395  -3.571   9.973  1.00  9.97           C
ATOM    438  OG1 THR A 146      -9.098  -4.103   9.642  1.00  8.75           O
ATOM    439  CG2 THR A 146     -11.420  -4.412   9.206  1.00  8.34           C
ATOM    440  N   LEU A 147      -8.471  -1.689  10.890  1.00  8.40           N
ATOM    441  CA  LEU A 147      -7.542  -0.952  11.737  1.00 10.01           C
ATOM    442  C   LEU A 147      -7.281   0.470  11.267  1.00 10.27           C
ATOM    443  O   LEU A 147      -7.281   1.392  12.076  1.00  8.52           O
ATOM    444  CB  LEU A 147      -6.213  -1.720  11.744  1.00 13.76           C
ATOM    445  CG  LEU A 147      -5.066  -1.285  12.639  1.00 16.03           C
ATOM    446  CD1 LEU A 147      -3.972  -2.369  12.648  1.00 18.03           C
ATOM    447  CD2 LEU A 147      -4.415   0.014  12.171  1.00 18.36           C
ATOM    448  N   LEU A 148      -6.956   0.639   9.973  1.00 10.54           N
ATOM    449  CA  LEU A 148      -6.619   1.984   9.504  1.00  9.28           C
ATOM    450  C   LEU A 148      -7.794   2.923   9.769  1.00  7.49           C
ATOM    451  O   LEU A 148      -7.589   3.995  10.327  1.00  8.53           O
ATOM    452  CB  LEU A 148      -6.228   1.992   8.026  1.00  8.01           C
ATOM    453  CG  LEU A 148      -5.819   3.358   7.451  1.00  7.92           C
ATOM    454  CD1 LEU A 148      -4.615   3.958   8.156  1.00  7.68           C
ATOM    455  CD2 LEU A 148      -5.536   3.247   5.956  1.00  7.20           C
ATOM    456  N   VAL A 149      -8.988   2.562   9.318  1.00  5.78           N
ATOM    457  CA  VAL A 149     -10.167   3.430   9.467  1.00  7.27           C
ATOM    458  C   VAL A 149     -10.478   3.688  10.936  1.00  8.10           C
ATOM    459  O   VAL A 149     -10.764   4.808  11.362  1.00 10.37           O
ATOM    460  CB  VAL A 149     -11.381   2.848   8.730  1.00  4.23           C
ATOM    461  CG1 VAL A 149     -12.663   3.648   8.960  1.00  7.29           C
ATOM    462  CG2 VAL A 149     -11.103   2.833   7.218  1.00  5.93           C
ATOM    463  N   GLN A 150     -10.410   2.628  11.739  1.00  8.03           N
ATOM    464  CA  GLN A 150     -10.681   2.741  13.164  1.00  9.11           C
ATOM    465  C   GLN A 150      -9.678   3.677  13.823  1.00  8.39           C
ATOM    466  O   GLN A 150     -10.097   4.550  14.580  1.00  9.35           O
ATOM    467  CB  GLN A 150     -10.642   1.352  13.817  1.00 14.96           C
ATOM    468  CG  GLN A 150     -11.105   1.462  15.267  1.00 22.14           C
ATOM    469  CD  GLN A 150     -11.602   0.156  15.841  1.00 25.50           C
ATOM    470  OE1 GLN A 150     -11.083  -0.910  15.519  1.00 28.18           O
ATOM    471  NE2 GLN A 150     -12.615   0.244  16.702  1.00 29.84           N
ATOM    472  N   THR A 151      -8.378   3.521  13.556  1.00  8.05           N
ATOM    473  CA  THR A 151      -7.400   4.440  14.162  1.00  7.96           C
ATOM    474  C   THR A 151      -7.647   5.894  13.798  1.00  8.35           C
ATOM    475  O   THR A 151      -7.720   6.772  14.661  1.00  8.22           O
ATOM    476  CB  THR A 151      -5.968   4.021  13.785  1.00 11.32           C
ATOM    477  OG1 THR A 151      -5.756   2.735  14.387  1.00 11.96           O
ATOM    478  CG2 THR A 151      -4.924   5.009  14.282  1.00  9.34           C
ATOM    479  N   LEU A 152      -7.832   6.168  12.504  1.00  8.14           N
ATOM    480  CA  LEU A 152      -8.041   7.551  12.051  1.00  7.29           C
ATOM    481  C   LEU A 152      -9.347   8.115  12.612  1.00  9.17           C
ATOM    482  O   LEU A 152      -9.432   9.297  12.977  1.00  8.29           O
ATOM    483  CB  LEU A 152      -7.959   7.571  10.528  1.00  6.78           C
ATOM    484  CG  LEU A 152      -6.569   7.205   9.945  1.00  6.61           C
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ATOM    485  CD1 LEU A 152      -6.681   7.078   8.430  1.00  5.51           C
ATOM    486  CD2 LEU A 152      -5.516   8.245  10.319  1.00  7.04           C
ATOM    487  N   SER A 153     -10.373   7.285  12.706  1.00  7.28           N
ATOM    488  CA  SER A 153     -11.652   7.727  13.278  1.00 11.14           C
ATOM    489  C   SER A 153     -11.444   8.099  14.745  1.00 10.95           C
ATOM    490  O   SER A 153     -11.930   9.127  15.225  1.00 11.85           O
ATOM    491  CB  SER A 153     -12.692   6.604  13.137  1.00  7.29           C
ATOM    492  OG ASER A 153     -12.965   6.370  11.762  0.50  6.72           O
ATOM    493  OG BSER A 153     -13.872   6.992  13.815  0.50 12.37           O
ATOM    494  N   GLU A 154     -10.730   7.252  15.499  1.00 12.45           N
ATOM    495  CA  GLU A 154     -10.492   7.518  16.924  1.00 13.47           C
ATOM    496  C   GLU A 154      -9.680   8.783  17.155  1.00 12.90           C
ATOM    497  O   GLU A 154      -9.967   9.552  18.076  1.00 12.37           O
ATOM    498  CB  GLU A 154      -9.833   6.309  17.615  1.00 12.58           C
ATOM    499  CG  GLU A 154     -10.822   5.161  17.779  1.00 14.64           C
ATOM    500  CD  GLU A 154     -10.314   3.936  18.499  1.00 20.19           C
ATOM    501  OE1 GLU A 154      -9.272   3.982  19.194  1.00 21.91           O
ATOM    502  OE2 GLU A 154     -10.963   2.868  18.411  1.00 19.21           O
ATOM    503  N   ILE A 155      -8.666   9.039  16.336  1.00 10.49           N
ATOM    504  CA  ILE A 155      -7.852  10.237  16.439  1.00  9.77           C
ATOM    505  C   ILE A 155      -8.686  11.472  16.092  1.00 10.81           C
ATOM    506  O   ILE A 155      -8.660  12.463  16.812  1.00 10.95           O
ATOM    507  CB  ILE A 155      -6.633  10.141  15.490  1.00 11.73           C
ATOM    508  CG1 ILE A 155      -5.740   9.000  15.991  1.00 10.67           C
ATOM    509  CG2 ILE A 155      -5.898  11.473  15.427  1.00  9.54           C
ATOM    510  CD1 ILE A 155      -4.548   8.672  15.106  1.00  7.45           C
ATOM    511  N   ARG A 156      -9.513  11.399  15.052  1.00 10.62           N
ATOM    512  CA  ARG A 156     -10.364  12.547  14.726  1.00 12.10           C
ATOM    513  C   ARG A 156     -11.260  12.931  15.905  1.00 12.02           C
ATOM    514  O   ARG A 156     -11.376  14.120  16.227  1.00 11.35           O
ATOM    515  CB  ARG A 156     -11.216  12.236  13.497  1.00 11.23           C
ATOM    516  CG  ARG A 156     -12.289  13.283  13.233  1.00 12.89           C
ATOM    517  CD  ARG A 156     -13.139  12.927  12.031  1.00 12.14           C
ATOM    518  NE  ARG A 156     -12.449  13.190  10.767  1.00 11.44           N
ATOM    519  CZ  ARG A 156     -12.838  12.636   9.622  1.00 12.60           C
ATOM    520  NH1 ARG A 156     -13.835  11.754   9.531  1.00 10.76           N
ATOM    521  NH2 ARG A 156     -12.175  12.940   8.522  1.00 11.99           N
ATOM    522  N   GLU A 157     -11.881  11.936  16.518  1.00 12.42           N
ATOM    523  CA  GLU A 157     -12.768  12.146  17.675  1.00 16.51           C
ATOM    524  C   GLU A 157     -12.006  12.784  18.822  1.00 16.44           C
ATOM    525  O   GLU A 157     -12.458  13.761  19.418  1.00 12.67           O
ATOM    526  CB  GLU A 157     -13.386  10.799  18.005  1.00 21.63           C
ATOM    527  CG  GLU A 157     -13.788  10.427  19.406  1.00 30.85           C
ATOM    528  CD  GLU A 157     -14.376   9.033  19.538  1.00 35.79           C
ATOM    529  OE1 GLU A 157     -13.654   8.015  19.378  1.00 36.29           O
ATOM    530  OE2 GLU A 157     -15.602   8.937  19.804  1.00 39.48           O
ATOM    531  N   ALA A 158     -10.788  12.307  19.108  1.00 16.94           N
ATOM    532  CA  ALA A 158      -9.981  12.868  20.193  1.00 15.78           C
ATOM    533  C   ALA A 158      -9.602  14.304  19.878  1.00 16.51           C
ATOM    534  O   ALA A 158      -9.706  15.195  20.729  1.00 17.18           O
ATOM    535  CB  ALA A 158      -8.743  12.008  20.432  1.00 16.24           C
ATOM    536  N   ASN A 159      -9.223  14.574  18.624  1.00 14.61           N
ATOM    537  CA  ASN A 159      -8.868  15.913  18.191  1.00 15.00           C
ATOM    538  C   ASN A 159     -10.037  16.888  18.204  1.00 16.92           C
ATOM    539  O   ASN A 159      -9.907  18.044  18.647  1.00 16.12           O
ATOM    540  CB  ASN A 159      -8.281  15.876  16.764  1.00 15.00           C
ATOM    541  CG  ASN A 159      -6.866  15.331  16.789  1.00 14.91           C
ATOM    542  OD1 ASN A 159      -6.283  15.148  17.875  1.00 14.98           O
ATOM    543  ND2 ASN A 159      -6.305  15.067  15.614  1.00  8.87           N
ATOM    544  N   GLN A 160     -11.198  16.415  17.763  1.00 16.89           N
ATOM    545  CA  GLN A 160     -12.403  17.252  17.753  1.00 20.76           C
ATOM    546  C   GLN A 160     -12.877  17.542  19.172  1.00 21.81           C
ATOM    547  O   GLN A 160     -13.481  18.590  19.413  1.00 22.79           O
ATOM    548  CB  GLN A 160     -13.517  16.631  16.906  1.00 21.05           C
ATOM    549  CG  GLN A 160     -13.248  16.762  15.412  1.00 21.93           C
ATOM    550  CD  GLN A 160     -14.287  16.101  14.534  1.00 26.67           C
ATOM    551  OE1 GLN A 160     -15.086  15.265  14.957  1.00 28.67           O
ATOM    552  NE2 GLN A 160     -14.277  16.430  13.245  1.00 26.21           N
ATOM    553  N   ALA A 161     -12.542  16.686  20.128  1.00 22.26           N
ATOM    554  CA  ALA A 161     -12.847  16.897  21.526  1.00 24.95           C
ATOM    555  C   ALA A 161     -11.860  17.842  22.199  1.00 26.81           C
ATOM    556  O   ALA A 161     -12.048  18.124  23.387  1.00 29.25           O
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ATOM    557  CB  ALA A 161     -12.910  15.578  22.289  1.00 25.97           C
ATOM    558  N   GLY A 162     -10.830  18.339  21.523  1.00 24.43           N
ATOM    559  CA  GLY A 162      -9.914  19.293  22.107  1.00 24.73           C
ATOM    560  C   GLY A 162      -8.499  18.847  22.403  1.00 24.28           C
ATOM    561  O   GLY A 162      -7.802  19.578  23.135  1.00 21.95           O
ATOM    562  N   ALA A 163      -8.037  17.706  21.885  1.00 19.55           N
ATOM    563  CA  ALA A 163      -6.654  17.315  22.188  1.00 22.03           C
ATOM    564  C   ALA A 163      -5.755  18.510  21.891  1.00 22.46           C
ATOM    565  O   ALA A 163      -5.933  19.174  20.870  1.00 21.19           O
ATOM    566  CB  ALA A 163      -6.215  16.110  21.375  1.00 23.50           C
ATOM    567  N   ASN A 164      -4.763  18.764  22.735  1.00 22.29           N
ATOM    568  CA  ASN A 164      -3.832  19.860  22.459  1.00 23.47           C
ATOM    569  C   ASN A 164      -2.460  19.539  23.016  1.00 21.73           C
ATOM    570  O   ASN A 164      -2.333  19.448  24.239  1.00 22.31           O
ATOM    571  CB  ASN A 164      -4.314  21.173  23.100  1.00 28.72           C
ATOM    572  CG  ASN A 164      -3.286  22.273  22.897  1.00 32.01           C
ATOM    573  OD1 ASN A 164      -2.696  22.368  21.821  1.00 34.27           O
ATOM    574  ND2 ASN A 164      -3.054  23.080  23.922  1.00 34.56           N
ATOM    575  N   PRO A 165      -1.465  19.415  22.149  1.00 20.86           N
ATOM    576  CA  PRO A 165      -1.606  19.526  20.713  1.00 19.44           C
ATOM    577  C   PRO A 165      -2.423  18.398  20.090  1.00 17.35           C
ATOM    578  O   PRO A 165      -2.698  17.420  20.779  1.00 14.86           O
ATOM    579  CB  PRO A 165      -0.181  19.385  20.174  1.00 20.03           C
ATOM    580  CG  PRO A 165       0.738  19.450  21.333  1.00 21.24           C
ATOM    581  CD  PRO A 165      -0.070  19.110  22.558  1.00 22.04           C
ATOM    582  N   GLN A 166      -2.809  18.527  18.822  1.00 14.41           N
ATOM    583  CA  GLN A 166      -3.583  17.498  18.150  1.00 14.75           C
ATOM    584  C   GLN A 166      -2.780  16.200  18.022  1.00 12.60           C
ATOM    585  O   GLN A 166      -1.551  16.271  17.991  1.00 12.39           O
ATOM    586  CB  GLN A 166      -3.992  17.942  16.725  1.00 18.33           C
ATOM    587  CG  GLN A 166      -2.869  17.964  15.707  1.00 24.17           C
ATOM    588  CD  GLN A 166      -3.253  18.266  14.273  1.00 26.89           C
ATOM    589  OE1 GLN A 166      -4.407  18.104  13.845  1.00 34.04           O
ATOM    590  NE2 GLN A 166      -2.281  18.693  13.472  1.00 24.83           N
ATOM    591  N   TYR A 167      -3.466  15.080  17.893  1.00 10.69           N
ATOM    592  CA  TYR A 167      -2.810  13.784  17.726  1.00 10.57           C
ATOM    593  C   TYR A 167      -2.529  13.452  16.260  1.00 10.87           C
ATOM    594  O   TYR A 167      -3.375  13.762  15.404  1.00  9.79           O
ATOM    595  CB  TYR A 167      -3.726  12.671  18.254  1.00 12.05           C
ATOM    596  CG  TYR A 167      -3.790  12.556  19.766  1.00 15.59           C
ATOM    597  CD1 TYR A 167      -2.765  11.974  20.497  1.00 19.75           C
ATOM    598  CD2 TYR A 167      -4.916  12.998  20.445  1.00 17.73           C
ATOM    599  CE1 TYR A 167      -2.839  11.856  21.879  1.00 22.74           C
ATOM    600  CE2 TYR A 167      -5.005  12.886  21.826  1.00 20.59           C
ATOM    601  CZ  TYR A 167      -3.965  12.324  22.531  1.00 24.04           C
ATOM    602  OH  TYR A 167      -4.074  12.243  23.899  1.00 27.41           O
ATOM    603  N   ALA A 168      -1.451  12.721  16.020  1.00  9.52           N
ATOM    604  CA  ALA A 168      -1.092  12.256  14.689  1.00 11.13           C
ATOM    605  C   ALA A 168      -0.963  10.725  14.700  1.00 11.90           C
ATOM    606  O   ALA A 168      -0.722  10.128  15.751  1.00 11.35           O
ATOM    607  CB  ALA A 168       0.221  12.842  14.200  1.00 12.45           C
ATOM    608  N   ALA A 169      -1.218  10.122  13.552  1.00  9.29           N
ATOM    609  CA  ALA A 169      -1.212   8.683  13.390  1.00  8.97           C
ATOM    610  C   ALA A 169       0.163   8.226  12.887  1.00  8.20           C
ATOM    611  O   ALA A 169       0.842   8.962  12.163  1.00  8.12           O
ATOM    612  CB  ALA A 169      -2.248   8.244  12.351  1.00  9.83           C
ATOM    613  N   GLN A 170       0.529   7.022  13.300  1.00  6.87           N
ATOM    614  CA  GLN A 170       1.795   6.399  12.914  1.00  7.82           C
ATOM    615  C   GLN A 170       1.418   5.032  12.340  1.00  7.61           C
ATOM    616  O   GLN A 170       0.853   4.194  13.040  1.00  8.51           O
ATOM    617  CB  GLN A 170       2.725   6.237  14.111  1.00  8.74           C
ATOM    618  CG  GLN A 170       3.190   7.555  14.746  1.00  9.33           C
ATOM    619  CD  GLN A 170       3.961   7.214  16.017  1.00 12.58           C
ATOM    620  OE1 GLN A 170       5.185   7.326  16.054  1.00 10.59           O
ATOM    621  NE2 GLN A 170       3.199   6.777  17.011  1.00  9.26           N
ATOM    622  N   ILE A 171       1.645   4.834  11.048  1.00  7.15           N
ATOM    623  CA  ILE A 171       1.226   3.620  10.354  1.00  7.05           C
ATOM    624  C   ILE A 171       2.338   3.035   9.484  1.00  6.89           C
ATOM    625  O   ILE A 171       3.093   3.776   8.848  1.00  8.42           O
ATOM    626  CB  ILE A 171       0.038   3.999   9.427  1.00  5.53           C
ATOM    627  CG1 ILE A 171      -1.228   4.417  10.189  1.00  5.97           C
ATOM    628  CG2 ILE A 171      -0.294   2.858   8.468  1.00  8.49           C
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ATOM	629	CD1	ILE	A	171	-1.839	3.285	11.007	1.00	8.37	C
ATOM	630	N	VAL	A	172	2.444	1.724	9.418	1.00	6.22	N
ATOM	631	CA	VAL	A	172	3.425	1.038	8.580	1.00	6.50	C
ATOM	632	C	VAL	A	172	2.716	0.401	7.390	1.00	6.35	C
ATOM	633	O	VAL	A	172	1.708	-0.268	7.599	1.00	5.88	O
ATOM	634	CB	VAL	A	172	4.207	-0.059	9.340	1.00	6.33	C
ATOM	635	CG1	VAL	A	172	5.357	-0.606	8.507	1.00	6.37	C
ATOM	636	CG2	VAL	A	172	4.753	0.482	10.667	1.00	6.87	C
ATOM	637	N	VAL	A	173	3.180	0.647	6.171	1.00	6.59	N
ATOM	638	CA	VAL	A	173	2.676	0.020	4.957	1.00	5.00	C
ATOM	639	C	VAL	A	173	3.564	-1.211	4.727	1.00	5.91	C
ATOM	640	O	VAL	A	173	4.768	-1.025	4.523	1.00	5.01	O
ATOM	641	CB	VAL	A	173	2.726	0.999	3.774	1.00	4.06	C
ATOM	642	CG1	VAL	A	173	2.177	0.400	2.487	1.00	6.54	C
ATOM	643	CG2	VAL	A	173	1.871	2.218	4.174	1.00	4.80	C
ATOM	644	N	TYR	A	174	3.009	-2.416	4.842	1.00	4.19	N
ATOM	645	CA	TYR	A	174	3.867	-3.614	4.739	1.00	5.44	C
ATOM	646	C	TYR	A	174	3.151	-4.781	4.065	1.00	7.78	C
ATOM	647	O	TYR	A	174	2.787	-5.753	4.744	1.00	7.53	O
ATOM	648	CB	TYR	A	174	4.329	-3.976	6.152	1.00	7.25	C
ATOM	649	CG	TYR	A	174	5.310	-5.116	6.345	1.00	6.83	C
ATOM	650	CD1	TYR	A	174	6.397	-5.292	5.515	1.00	5.84	C
ATOM	651	CD2	TYR	A	174	5.140	-6.023	7.387	1.00	9.12	C
ATOM	652	CE1	TYR	A	174	7.298	-6.342	5.684	1.00	7.16	C
ATOM	653	CE2	TYR	A	174	6.029	-7.078	7.570	1.00	8.99	C
ATOM	654	CZ	TYR	A	174	7.098	-7.227	6.726	1.00	9.40	C
ATOM	655	OH	TYR	A	174	8.002	-8.265	6.909	1.00	9.56	O
ATOM	656	N	ASP	A	175	2.979	-4.716	2.736	1.00	7.78	N
ATOM	657	CA	ASP	A	175	2.342	-5.832	2.032	1.00	8.15	C
ATOM	658	C	ASP	A	175	2.855	-6.052	0.621	1.00	7.45	C
ATOM	659	O	ASP	A	175	2.092	-6.538	-0.233	1.00	5.39	O
ATOM	660	CB	ASP	A	175	0.817	-5.703	2.009	1.00	8.19	C
ATOM	661	CG	ASP	A	175	0.075	-7.027	2.027	1.00	10.97	C
ATOM	662	OD1	ASP	A	175	0.706	-8.107	2.080	1.00	7.42	O
ATOM	663	OD2	ASP	A	175	-1.180	-7.003	2.036	1.00	8.40	O
ATOM	664	N	LEU	A	176	4.113	-5.716	0.305	1.00	6.84	N
ATOM	665	CA	LEU	A	176	4.585	-5.961	-1.066	1.00	5.89	C
ATOM	666	C	LEU	A	176	4.435	-7.443	-1.408	1.00	6.90	C
ATOM	667	O	LEU	A	176	4.642	-8.303	-0.543	1.00	5.82	O
ATOM	668	CB	LEU	A	176	6.058	-5.572	-1.209	1.00	5.16	C
ATOM	669	CG	LEU	A	176	6.371	-4.071	-1.318	1.00	8.40	C
ATOM	670	CD1	LEU	A	176	7.863	-3.845	-1.163	1.00	7.00	C
ATOM	671	CD2	LEU	A	176	5.876	-3.554	-2.669	1.00	7.87	C
ATOM	672	N	PRO	A	177	4.162	-7.741	-2.668	1.00	6.19	N
ATOM	673	CA	PRO	A	177	4.102	-9.103	-3.168	1.00	7.49	C
ATOM	674	C	PRO	A	177	5.488	-9.712	-3.184	1.00	8.85	C
ATOM	675	O	PRO	A	177	6.476	-8.983	-3.364	1.00	7.84	O
ATOM	676	CB	PRO	A	177	3.535	-8.953	-4.579	1.00	6.43	C
ATOM	677	CG	PRO	A	177	4.086	-7.627	-5.027	1.00	5.53	C
ATOM	678	CD	PRO	A	177	4.018	-6.763	-3.780	1.00	5.57	C
ATOM	679	N	ASP	A	178	5.605	-11.022	-2.954	1.00	7.91	N
ATOM	680	CA	ASP	A	178	6.923	-11.654	-2.815	1.00	7.32	C
ATOM	681	C	ASP	A	178	7.691	-10.927	-1.693	1.00	9.26	C
ATOM	682	O	ASP	A	178	8.886	-10.638	-1.786	1.00	8.12	O
ATOM	683	CB	ASP	A	178	7.785	-11.636	-4.080	1.00	7.96	C
ATOM	684	CG	ASP	A	178	7.401	-12.747	-5.057	1.00	9.44	C
ATOM	685	OD1	ASP	A	178	6.251	-13.216	-5.066	1.00	8.40	O
ATOM	686	OD2	ASP	A	178	8.275	-13.156	-5.851	1.00	7.75	O
ATOM	687	N	ARG	A	179	7.008	-10.677	-0.581	1.00	8.32	N
ATOM	688	CA	ARG	A	179	7.517	-9.895	0.528	1.00	6.43	C
ATOM	689	C	ARG	A	179	8.684	-10.629	1.171	1.00	8.91	C
ATOM	690	O	ARG	A	179	8.739	-11.867	1.142	1.00	7.98	O
ATOM	691	CB	ARG	A	179	6.421	-9.671	1.585	1.00	6.59	C
ATOM	692	CG	ARG	A	179	6.548	-8.377	2.388	1.00	6.39	C
ATOM	693	CD	ARG	A	179	5.390	-8.181	3.371	1.00	5.74	C
ATOM	694	NE	ARG	A	179	5.439	-9.112	4.496	1.00	7.74	N
ATOM	695	CZ	ARG	A	179	4.466	-9.286	5.388	1.00	9.10	C
ATOM	696	NH1	ARG	A	179	3.330	-8.584	5.305	1.00	7.63	N
ATOM	697	NH2	ARG	A	179	4.658	-10.174	6.357	1.00	9.35	N
ATOM	698	N	ASP	A	180	9.538	-9.839	1.800	1.00	5.91	N
ATOM	699	CA	ASP	A	180	10.674	-10.407	2.538	1.00	8.70	C
ATOM	700	C	ASP	A	180	11.403	-11.412	1.678	1.00	8.46	C

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ATOM    701  O   ASP A 180      11.639 -12.554   2.082  1.00  8.16           O
ATOM    702  CB  ASP A 180      10.138 -11.100   3.804  1.00 10.53           C
ATOM    703  CG  ASP A 180       9.162 -10.249   4.584  1.00 11.25           C
ATOM    704  OD1 ASP A 180       9.586  -9.194   5.098  1.00 10.71           O
ATOM    705  OD2 ASP A 180       7.975 -10.647   4.660  1.00 11.09           O
ATOM    706  N   CYS A 181      11.866 -11.005   0.501  1.00  5.59           N
ATOM    707  CA  CYS A 181      12.461 -11.902  -0.473  1.00  9.32           C
ATOM    708  C   CYS A 181      13.595 -12.764   0.064  1.00 11.57           C
ATOM    709  O   CYS A 181      13.790 -13.878  -0.451  1.00  9.99           O
ATOM    710  CB  CYS A 181      12.849 -11.108  -1.739  1.00 10.48           C
ATOM    711  SG  CYS A 181      14.106  -9.825  -1.483  1.00 10.63           S
ATOM    712  N   ALA A 182      14.452 -12.284   0.955  1.00 11.66           N
ATOM    713  CA  ALA A 182      15.609 -13.089   1.370  1.00 12.75           C
ATOM    714  C   ALA A 182      15.377 -13.877   2.645  1.00 13.68           C
ATOM    715  O   ALA A 182      16.312 -14.523   3.150  1.00 15.78           O
ATOM    716  CB  ALA A 182      16.798 -12.153   1.601  1.00 13.81           C
ATOM    717  N   ALA A 183      14.190 -13.781   3.223  1.00 12.52           N
ATOM    718  CA  ALA A 183      13.925 -14.428   4.501  1.00 15.56           C
ATOM    719  C   ALA A 183      13.746 -15.932   4.321  1.00 16.39           C
ATOM    720  O   ALA A 183      13.307 -16.398   3.278  1.00 14.02           O
ATOM    721  CB  ALA A 183      12.721 -13.814   5.186  1.00 15.25           C
ATOM    722  N   ALA A 184      13.975 -16.656   5.411  1.00 16.34           N
ATOM    723  CA  ALA A 184      13.732 -18.103   5.392  1.00 18.14           C
ATOM    724  C   ALA A 184      12.235 -18.367   5.334  1.00 18.59           C
ATOM    725  O   ALA A 184      11.798 -19.336   4.716  1.00 18.36           O
ATOM    726  CB  ALA A 184      14.347 -18.746   6.629  1.00 18.88           C
ATOM    727  N   ALA A 185      11.437 -17.518   5.972  1.00 18.11           N
ATOM    728  CA  ALA A 185       9.987 -17.645   5.958  1.00 18.85           C
ATOM    729  C   ALA A 185       9.374 -16.253   5.803  1.00 19.79           C
ATOM    730  O   ALA A 185      10.044 -15.282   6.165  1.00 21.64           O
ATOM    731  CB  ALA A 185       9.519 -18.312   7.244  1.00 18.74           C
ATOM    732  N   SER A 186       8.174 -16.131   5.257  1.00 16.50           N
ATOM    733  CA  SER A 186       7.534 -14.824   5.138  1.00 14.74           C
ATOM    734  C   SER A 186       6.037 -14.928   5.406  1.00 11.68           C
ATOM    735  O   SER A 186       5.400 -15.854   4.927  1.00 15.58           O
ATOM    736  CB  SER A 186       7.669 -14.191   3.738  1.00 12.02           C
ATOM    737  OG  SER A 186       6.873 -12.991   3.674  1.00  7.18           O
ATOM    738  N   ASN A 187       5.474 -13.916   6.073  1.00 12.93           N
ATOM    739  CA  ASN A 187       4.019 -13.951   6.288  1.00 14.15           C
ATOM    740  C   ASN A 187       3.294 -13.102   5.253  1.00 14.18           C
ATOM    741  O   ASN A 187       2.092 -12.870   5.422  1.00 13.19           O
ATOM    742  CB  ASN A 187       3.676 -13.526   7.709  1.00 16.10           C
ATOM    743  CG  ASN A 187       4.233 -14.531   8.710  1.00 19.21           C
ATOM    744  OD1 ASN A 187       4.132 -15.734   8.460  1.00 19.15           O
ATOM    745  ND2 ASN A 187       4.824 -14.016   9.784  1.00 19.14           N
ATOM    746  N   GLY A 188       4.005 -12.650   4.213  1.00 10.41           N
ATOM    747  CA  GLY A 188       3.325 -11.847   3.180  1.00 11.38           C
ATOM    748  C   GLY A 188       2.240 -12.689   2.509  1.00 12.88           C
ATOM    749  O   GLY A 188       2.471 -13.886   2.263  1.00 13.06           O
ATOM    750  N   GLU A 189       1.122 -12.085   2.113  1.00  8.31           N
ATOM    751  CA  GLU A 189       0.035 -12.869   1.510  1.00  8.27           C
ATOM    752  C   GLU A 189       0.009 -12.907   0.001  1.00  9.32           C
ATOM    753  O   GLU A 189      -0.786 -13.650  -0.600  1.00  9.95           O
ATOM    754  CB  GLU A 189      -1.306 -12.307   2.026  1.00 13.12           C
ATOM    755  CG  GLU A 189      -1.596 -10.879   1.619  1.00 12.11           C
ATOM    756  CD  GLU A 189      -2.654 -10.205   2.484  1.00 17.28           C
ATOM    757  OE1 GLU A 189      -3.502 -10.846   3.146  1.00 14.92           O
ATOM    758  OE2 GLU A 189      -2.641  -8.957   2.510  1.00 10.34           O
ATOM    759  N   TRP A 190       0.735 -12.007  -0.681  1.00  6.80           N
ATOM    760  CA  TRP A 190       0.667 -11.938  -2.126  1.00  6.48           C
ATOM    761  C   TRP A 190       1.961 -12.320  -2.816  1.00  6.91           C
ATOM    762  O   TRP A 190       3.045 -12.169  -2.267  1.00  7.46           O
ATOM    763  CB  TRP A 190       0.271 -10.501  -2.546  1.00  6.49           C
ATOM    764  CG  TRP A 190      -1.127 -10.157  -2.118  1.00  7.61           C
ATOM    765  CD1 TRP A 190      -2.204 -11.011  -2.031  1.00  7.87           C
ATOM    766  CD2 TRP A 190      -1.608  -8.862  -1.737  1.00  8.08           C
ATOM    767  NE1 TRP A 190      -3.321 -10.324  -1.599  1.00  8.98           N
ATOM    768  CE2 TRP A 190      -2.985  -9.004  -1.429  1.00 10.21           C
ATOM    769  CE3 TRP A 190      -1.016  -7.605  -1.624  1.00  6.64           C
ATOM    770  CZ2 TRP A 190      -3.762  -7.929  -0.994  1.00  8.76           C
ATOM    771  CZ3 TRP A 190      -1.785  -6.535  -1.202  1.00  7.39           C
ATOM    772  CH2 TRP A 190      -3.157  -6.706  -0.910  1.00  8.88           C
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ATOM	773	N	ALA	A	191	1.815	-12.812	-4.045	1.00	7.08	N
ATOM	774	CA	ALA	A	191	2.962	-13.223	-4.841	1.00	7.97	C
ATOM	775	C	ALA	A	191	2.912	-12.539	-6.197	1.00	6.92	C
ATOM	776	O	ALA	A	191	1.857	-12.425	-6.839	1.00	8.51	O
ATOM	777	CB	ALA	A	191	2.960	-14.745	-5.066	1.00	8.04	C
ATOM	778	N	ILE	A	192	4.096	-12.148	-6.674	1.00	6.38	N
ATOM	779	CA	ILE	A	192	4.187	-11.531	-7.990	1.00	7.15	C
ATOM	780	C	ILE	A	192	3.598	-12.423	-9.067	1.00	9.47	C
ATOM	781	O	ILE	A	192	2.875	-11.970	-9.960	1.00	8.26	O
ATOM	782	CB	ILE	A	192	5.670	-11.171	-8.242	1.00	9.08	C
ATOM	783	CG1	ILE	A	192	6.110	-10.095	-7.237	1.00	7.02	C
ATOM	784	CG2	ILE	A	192	5.867	-10.697	-9.671	1.00	10.47	C
ATOM	785	CD1	ILE	A	192	7.612	-9.782	-7.333	1.00	8.31	C
ATOM	786	N	ALA	A	193	3.830	-13.744	-9.006	1.00	8.91	N
ATOM	787	CA	ALA	A	193	3.331	-14.652	-10.052	1.00	8.35	C
ATOM	788	C	ALA	A	193	1.840	-14.919	-9.952	1.00	9.08	C
ATOM	789	O	ALA	A	193	1.250	-15.499	-10.890	1.00	9.70	O
ATOM	790	CB	ALA	A	193	4.122	-15.944	-9.990	1.00	5.81	C
ATOM	791	N	ASN	A	194	1.179	-14.440	-8.894	1.00	7.87	N
ATOM	792	CA	ASN	A	194	-0.260	-14.629	-8.743	1.00	9.39	C
ATOM	793	C	ASN	A	194	-1.023	-13.329	-8.518	1.00	9.01	C
ATOM	794	O	ASN	A	194	-1.675	-13.106	-7.493	1.00	7.99	O
ATOM	795	CB	ASN	A	194	-0.489	-15.590	-7.568	1.00	8.00	C
ATOM	796	CG	ASN	A	194	-1.917	-16.126	-7.515	1.00	8.97	C
ATOM	797	OD1	ASN	A	194	-2.644	-16.088	-8.495	1.00	9.02	O
ATOM	798	ND2	ASN	A	194	-2.306	-16.592	-6.336	1.00	8.31	N
ATOM	799	N	ASN	A	195	-0.891	-12.397	-9.451	1.00	8.58	N
ATOM	800	CA	ASN	A	195	-1.520	-11.088	-9.442	1.00	9.85	C
ATOM	801	C	ASN	A	195	-1.061	-10.154	-8.338	1.00	8.67	C
ATOM	802	O	ASN	A	195	-1.754	-9.165	-8.033	1.00	8.91	O
ATOM	803	CB	ASN	A	195	-3.057	-11.250	-9.381	1.00	12.56	C
ATOM	804	CG	ASN	A	195	-3.782	-10.203	-10.209	1.00	19.10	C
ATOM	805	OD1	ASN	A	195	-3.299	-9.703	-11.231	1.00	21.35	O
ATOM	806	ND2	ASN	A	195	-4.977	-9.821	-9.778	1.00	22.07	N
ATOM	807	N	GLY	A	196	0.135	-10.327	-7.790	1.00	8.59	N
ATOM	808	CA	GLY	A	196	0.601	-9.515	-6.670	1.00	9.21	C
ATOM	809	C	GLY	A	196	0.707	-8.029	-6.987	1.00	8.96	C
ATOM	810	O	GLY	A	196	0.419	-7.218	-6.108	1.00	7.60	O
ATOM	811	N	VAL	A	197	1.115	-7.657	-8.194	1.00	8.08	N
ATOM	812	CA	VAL	A	197	1.235	-6.222	-8.519	1.00	10.31	C
ATOM	813	C	VAL	A	197	-0.120	-5.546	-8.524	1.00	10.94	C
ATOM	814	O	VAL	A	197	-0.286	-4.489	-7.904	1.00	9.21	O
ATOM	815	CB	VAL	A	197	1.957	-6.067	-9.864	1.00	11.44	C
ATOM	816	CG1	VAL	A	197	1.779	-4.680	-10.467	1.00	14.20	C
ATOM	817	CG2	VAL	A	197	3.446	-6.345	-9.654	1.00	10.24	C
ATOM	818	N	ASN	A	198	-1.098	-6.124	-9.230	1.00	8.07	N
ATOM	819	CA	ASN	A	198	-2.440	-5.558	-9.228	1.00	9.21	C
ATOM	820	C	ASN	A	198	-3.019	-5.589	-7.809	1.00	8.59	C
ATOM	821	O	ASN	A	198	-3.643	-4.598	-7.430	1.00	6.84	O
ATOM	822	CB	ASN	A	198	-3.380	-6.276	-10.188	1.00	12.07	C
ATOM	823	CG	ASN	A	198	-3.021	-5.967	-11.636	1.00	15.65	C
ATOM	824	OD1	ASN	A	198	-2.439	-4.920	-11.921	1.00	18.16	O
ATOM	825	ND2	ASN	A	198	-3.343	-6.918	-12.491	1.00	19.39	N
ATOM	826	N	ASN	A	199	-2.781	-6.648	-7.045	1.00	8.80	N
ATOM	827	CA	ASN	A	199	-3.261	-6.673	-5.669	1.00	8.85	C
ATOM	828	C	ASN	A	199	-2.649	-5.532	-4.869	1.00	8.69	C
ATOM	829	O	ASN	A	199	-3.354	-4.844	-4.095	1.00	6.34	O
ATOM	830	CB	ASN	A	199	-2.926	-8.008	-4.977	1.00	9.54	C
ATOM	831	CG	ASN	A	199	-3.773	-9.134	-5.551	1.00	10.26	C
ATOM	832	OD1	ASN	A	199	-4.717	-8.930	-6.282	1.00	6.60	O
ATOM	833	ND2	ASN	A	199	-3.358	-10.343	-5.169	1.00	12.35	N
ATOM	834	N	TYR	A	200	-1.355	-5.282	-4.968	1.00	8.36	N
ATOM	835	CA	TYR	A	200	-0.721	-4.227	-4.190	1.00	7.73	C
ATOM	836	C	TYR	A	200	-1.138	-2.842	-4.636	1.00	7.43	C
ATOM	837	O	TYR	A	200	-1.330	-1.912	-3.846	1.00	6.72	O
ATOM	838	CB	TYR	A	200	0.797	-4.402	-4.311	1.00	7.60	C
ATOM	839	CG	TYR	A	200	1.557	-3.495	-3.363	1.00	7.71	C
ATOM	840	CD1	TYR	A	200	1.701	-3.853	-2.034	1.00	7.33	C
ATOM	841	CD2	TYR	A	200	2.119	-2.300	-3.797	1.00	5.65	C
ATOM	842	CE1	TYR	A	200	2.375	-3.028	-1.151	1.00	6.11	C
ATOM	843	CE2	TYR	A	200	2.816	-1.480	-2.932	1.00	6.72	C
ATOM	844	CZ	TYR	A	200	2.934	-1.846	-1.609	1.00	6.44	C

	ATOM	845	OH	TYR	A	200	3.630	-1.063	-0.706	1.00	4.84	O
	ATOM	846	N	LYS	A	201	-1.249	-2.654	-5.967	1.00	6.14	N
	ATOM	847	CA	LYS	A	201	-1.711	-1.332	-6.421	1.00	8.44	C
	ATOM	848	C	LYS	A	201	-3.084	-0.987	-5.888	1.00	8.09	C
5	ATOM	849	O	LYS	A	201	-3.358	0.162	-5.537	1.00	7.64	O
	ATOM	850	CB	LYS	A	201	-1.722	-1.275	-7.958	1.00	8.28	C
	ATOM	851	CG	LYS	A	201	-0.263	-1.194	-8.455	1.00	11.36	C
	ATOM	852	CD	LYS	A	201	-0.270	-1.168	-9.985	1.00	17.13	C
	ATOM	853	CE	LYS	A	201	1.119	-0.858	-10.519	1.00	24.94	C
10	ATOM	854	NZ	LYS	A	201	1.127	-0.609	-11.994	1.00	28.50	N
	ATOM	855	N	ALA	A	202	-3.996	-1.970	-5.845	1.00	5.77	N
	ATOM	856	CA	ALA	A	202	-5.339	-1.699	-5.334	1.00	4.88	C
	ATOM	857	C	ALA	A	202	-5.303	-1.387	-3.846	1.00	7.44	C
	ATOM	858	O	ALA	A	202	-6.086	-0.566	-3.327	1.00	7.04	O
15	ATOM	859	CB	ALA	A	202	-6.274	-2.864	-5.654	1.00	6.18	C
	ATOM	860	N	TYR	A	203	-4.447	-2.079	-3.096	1.00	6.09	N
	ATOM	861	CA	TYR	A	203	-4.255	-1.839	-1.660	1.00	6.29	C
	ATOM	862	C	TYR	A	203	-3.753	-0.412	-1.434	1.00	7.79	C
	ATOM	863	O	TYR	A	203	-4.301	0.324	-0.608	1.00	8.11	O
20	ATOM	864	CB	TYR	A	203	-3.305	-2.875	-1.132	1.00	8.66	C
	ATOM	865	CG	TYR	A	203	-2.451	-2.706	0.101	1.00	7.91	C
	ATOM	866	CD1	TYR	A	203	-1.162	-2.207	-0.008	1.00	8.34	C
	ATOM	867	CD2	TYR	A	203	-2.886	-3.130	1.346	1.00	6.58	C
	ATOM	868	CE1	TYR	A	203	-0.339	-2.076	1.106	1.00	7.67	C
25	ATOM	869	CE2	TYR	A	203	-2.071	-3.013	2.464	1.00	6.79	C
	ATOM	870	CZ	TYR	A	203	-0.805	-2.506	2.334	1.00	6.29	C
	ATOM	871	OH	TYR	A	203	0.025	-2.399	3.437	1.00	7.31	O
	ATOM	872	N	ILE	A	204	-2.737	0.009	-2.173	1.00	6.92	N
	ATOM	873	CA	ILE	A	204	-2.239	1.390	-2.051	1.00	7.79	C
30	ATOM	874	C	ILE	A	204	-3.362	2.374	-2.397	1.00	9.37	C
	ATOM	875	O	ILE	A	204	-3.577	3.389	-1.721	1.00	6.39	O
	ATOM	876	CB	ILE	A	204	-1.038	1.581	-2.999	1.00	7.73	C
	ATOM	877	CG1	ILE	A	204	0.193	0.800	-2.523	1.00	6.07	C
	ATOM	878	CG2	ILE	A	204	-0.725	3.066	-3.180	1.00	7.51	C
35	ATOM	879	CD1	ILE	A	204	0.716	1.160	-1.132	1.00	6.22	C
	ATOM	880	N	ASN	A	205	-4.148	2.106	-3.436	1.00	7.38	N
	ATOM	881	CA	ASN	A	205	-5.225	2.975	-3.886	1.00	7.98	C
	ATOM	882	C	ASN	A	205	-6.309	3.135	-2.825	1.00	8.46	C
	ATOM	883	O	ASN	A	205	-6.838	4.226	-2.623	1.00	7.81	O
40	ATOM	884	CB	ASN	A	205	-5.875	2.429	-5.171	1.00	10.52	C
	ATOM	885	CG	ASN	A	205	-4.998	2.549	-6.397	1.00	13.03	C
	ATOM	886	OD1	ASN	A	205	-4.030	3.305	-6.346	1.00	11.52	O
	ATOM	887	ND2	ASN	A	205	-5.294	1.837	-7.478	1.00	13.75	N
	ATOM	888	N	ARG	A	206	-6.674	2.048	-2.147	1.00	7.82	N
45	ATOM	889	CA	ARG	A	206	-7.691	2.110	-1.098	1.00	5.94	C
	ATOM	890	C	ARG	A	206	-7.129	2.869	0.098	1.00	6.34	C
	ATOM	891	O	ARG	A	206	-7.811	3.702	0.689	1.00	6.50	O
	ATOM	892	CB	ARG	A	206	-8.131	0.704	-0.678	1.00	7.36	C
	ATOM	893	CG	ARG	A	206	-9.162	0.698	0.434	1.00	9.57	C
50	ATOM	894	CD	ARG	A	206	-10.424	1.492	0.047	1.00	11.46	C
	ATOM	895	NE	ARG	A	206	-11.310	1.549	1.207	1.00	9.53	N
	ATOM	896	CZ	ARG	A	206	-12.180	2.501	1.508	1.00	13.46	C
	ATOM	897	NH1	ARG	A	206	-12.351	3.567	0.730	1.00	10.85	N
	ATOM	898	NH2	ARG	A	206	-12.883	2.371	2.629	1.00	15.76	N
55	ATOM	899	N	ILE	A	207	-5.869	2.603	0.470	1.00	5.91	N
	ATOM	900	CA	ILE	A	207	-5.243	3.399	1.535	1.00	6.69	C
	ATOM	901	C	ILE	A	207	-5.280	4.901	1.186	1.00	6.65	C
	ATOM	902	O	ILE	A	207	-5.635	5.728	2.039	1.00	5.55	O
	ATOM	903	CB	ILE	A	207	-3.772	2.974	1.749	1.00	4.84	C
60	ATOM	904	CG1	ILE	A	207	-3.769	1.547	2.340	1.00	6.07	C
	ATOM	905	CG2	ILE	A	207	-3.072	3.984	2.664	1.00	5.33	C
	ATOM	906	CD1	ILE	A	207	-2.368	0.923	2.318	1.00	6.90	C
	ATOM	907	N	ARG	A	208	-4.945	5.229	-0.056	1.00	5.80	N
	ATOM	908	CA	ARG	A	208	-4.962	6.626	-0.500	1.00	7.25	C
65	ATOM	909	C	ARG	A	208	-6.349	7.205	-0.305	1.00	8.00	C
	ATOM	910	O	ARG	A	208	-6.494	8.305	0.255	1.00	7.26	O
	ATOM	911	CB	ARG	A	208	-4.500	6.734	-1.967	1.00	7.91	C
	ATOM	912	CG	ARG	A	208	-4.591	8.134	-2.560	1.00	8.82	C
	ATOM	913	CD	ARG	A	208	-4.430	8.105	-4.089	1.00	12.48	C
70	ATOM	914	NE	ARG	A	208	-4.761	9.411	-4.660	1.00	17.58	N
	ATOM	915	CZ	ARG	A	208	-4.008	10.500	-4.595	1.00	18.05	C
	ATOM	916	NH1	ARG	A	208	-2.813	10.447	-4.042	1.00	18.69	N

	ATOM	917	NH2	ARG	A	208	-4.390	11.662	-5.107	1.00	18.85	N
	ATOM	918	N	GLU	A	209	-7.387	6.464	-0.697	1.00	8.98	N
	ATOM	919	CA	GLU	A	209	-8.762	6.936	-0.549	1.00	9.20	C
	ATOM	920	C	GLU	A	209	-9.100	7.252	0.907	1.00	9.37	C
5	ATOM	921	O	GLU	A	209	-9.811	8.213	1.198	1.00	5.42	O
	ATOM	922	CB	GLU	A	209	-9.801	5.898	-1.011	1.00	14.19	C
	ATOM	923	CG	GLU	A	209	-9.775	5.577	-2.482	1.00	19.51	C
	ATOM	924	CD	GLU	A	209	-10.953	4.737	-2.955	1.00	27.56	C
	ATOM	925	OE1	GLU	A	209	-11.688	4.142	-2.142	1.00	23.86	O
10	ATOM	926	OE2	GLU	A	209	-11.168	4.699	-4.190	1.00	31.35	O
	ATOM	927	N	ILE	A	210	-8.689	6.342	1.796	1.00	8.27	N
	ATOM	928	CA	ILE	A	210	-8.939	6.537	3.227	1.00	8.19	C
	ATOM	929	C	ILE	A	210	-8.127	7.721	3.754	1.00	7.27	C
	ATOM	930	O	ILE	A	210	-8.739	8.567	4.436	1.00	8.19	O
15	ATOM	931	CB	ILE	A	210	-8.574	5.249	3.992	1.00	9.16	C
	ATOM	932	CG1	ILE	A	210	-9.549	4.163	3.491	1.00	8.59	C
	ATOM	933	CG2	ILE	A	210	-8.663	5.453	5.503	1.00	7.84	C
	ATOM	934	CD1	ILE	A	210	-9.135	2.750	3.850	1.00	10.60	C
	ATOM	935	N	LEU	A	211	-6.863	7.839	3.375	1.00	5.07	N
20	ATOM	936	CA	LEU	A	211	-6.078	8.999	3.850	1.00	6.69	C
	ATOM	937	C	LEU	A	211	-6.699	10.305	3.366	1.00	6.81	C
	ATOM	938	O	LEU	A	211	-6.818	11.271	4.153	1.00	8.01	O
	ATOM	939	CB	LEU	A	211	-4.601	8.904	3.452	1.00	4.38	C
	ATOM	940	CG	LEU	A	211	-3.888	7.624	3.952	1.00	7.45	C
25	ATOM	941	CD1	LEU	A	211	-2.414	7.656	3.560	1.00	8.00	C
	ATOM	942	CD2	LEU	A	211	-4.015	7.430	5.452	1.00	5.27	C
	ATOM	943	N	ILE	A	212	-7.118	10.390	2.120	1.00	7.40	N
	ATOM	944	CA	ILE	A	212	-7.801	11.589	1.608	1.00	6.87	C
	ATOM	945	C	ILE	A	212	-9.026	11.931	2.435	1.00	9.74	C
30	ATOM	946	O	ILE	A	212	-9.303	13.118	2.669	1.00	8.71	O
	ATOM	947	CB	ILE	A	212	-8.200	11.389	0.129	1.00	11.16	C
	ATOM	948	CG1	ILE	A	212	-6.928	11.407	-0.743	1.00	13.44	C
	ATOM	949	CG2	ILE	A	212	-9.192	12.447	-0.350	1.00	10.28	C
	ATOM	950	CD1	ILE	A	212	-7.159	11.067	-2.205	1.00	14.96	C
35	ATOM	951	N	SER	A	213	-9.794	10.940	2.885	1.00	9.55	N
	ATOM	952	CA	SER	A	213	-10.992	11.131	3.688	1.00	9.05	C
	ATOM	953	C	SER	A	213	-10.670	11.535	5.124	1.00	10.31	C
	ATOM	954	O	SER	A	213	-11.534	12.085	5.825	1.00	10.55	O
	ATOM	955	CB	SER	A	213	-11.906	9.887	3.682	1.00	10.81	C
40	ATOM	956	OG	SER	A	213	-11.416	8.921	4.600	1.00	14.21	O
	ATOM	957	N	PHE	A	214	-9.423	11.361	5.552	1.00	7.72	N
	ATOM	958	CA	PHE	A	214	-8.973	11.784	6.869	1.00	6.91	C
	ATOM	959	C	PHE	A	214	-7.857	12.811	6.726	1.00	6.54	C
	ATOM	960	O	PHE	A	214	-6.825	12.751	7.397	1.00	5.46	O
45	ATOM	961	CB	PHE	A	214	-8.517	10.572	7.718	1.00	7.89	C
	ATOM	962	CG	PHE	A	214	-9.681	9.776	8.269	1.00	7.67	C
	ATOM	963	CD1	PHE	A	214	-10.359	10.203	9.394	1.00	6.38	C
	ATOM	964	CD2	PHE	A	214	-10.100	8.616	7.637	1.00	8.19	C
	ATOM	965	CE1	PHE	A	214	-11.432	9.478	9.884	1.00	10.20	C
50	ATOM	966	CE2	PHE	A	214	-11.173	7.884	8.124	1.00	10.30	C
	ATOM	967	CZ	PHE	A	214	-11.842	8.314	9.262	1.00	9.78	C
	ATOM	968	N	SER	A	215	-8.016	13.782	5.808	1.00	4.80	N
	ATOM	969	CA	SER	A	215	-6.997	14.821	5.612	1.00	6.15	C
	ATOM	970	C	SER	A	215	-6.789	15.757	6.800	1.00	7.31	C
55	ATOM	971	O	SER	A	215	-5.872	16.593	6.816	1.00	7.37	O
	ATOM	972	CB	SER	A	215	-7.343	15.653	4.369	1.00	7.97	C
	ATOM	973	OG	SER	A	215	-8.585	16.325	4.547	1.00	11.45	O
	ATOM	974	N	ASP	A	216	-7.645	15.679	7.812	1.00	6.24	N
	ATOM	975	CA	ASP	A	216	-7.578	16.404	9.055	1.00	8.27	C
60	ATOM	976	C	ASP	A	216	-6.767	15.636	10.105	1.00	9.81	C
	ATOM	977	O	ASP	A	216	-6.671	16.088	11.245	1.00	9.16	O
	ATOM	978	CB	ASP	A	216	-8.980	16.663	9.637	1.00	9.81	C
	ATOM	979	CG	ASP	A	216	-9.831	15.421	9.784	1.00	12.85	C
	ATOM	980	OD1	ASP	A	216	-9.695	14.429	9.033	1.00	10.45	O
65	ATOM	981	OD2	ASP	A	216	-10.692	15.391	10.687	1.00	15.34	O
	ATOM	982	N	VAL	A	217	-6.190	14.487	9.749	1.00	5.95	N
	ATOM	983	CA	VAL	A	217	-5.360	13.723	10.683	1.00	5.79	C
	ATOM	984	C	VAL	A	217	-3.938	13.613	10.124	1.00	7.70	C
	ATOM	985	O	VAL	A	217	-3.735	12.902	9.151	1.00	5.95	O
70	ATOM	986	CB	VAL	A	217	-5.911	12.334	10.993	1.00	9.08	C
	ATOM	987	CG1	VAL	A	217	-4.996	11.613	11.995	1.00	8.10	C
	ATOM	988	CG2	VAL	A	217	-7.317	12.378	11.593	1.00	8.01	C

ATOM	989	N	ARG	A	218	-2.984	14.287	10.773	1.00	7.72	N
ATOM	990	CA	ARG	A	218	-1.606	14.206	10.279	1.00	8.05	C
ATOM	991	C	ARG	A	218	-1.222	12.723	10.372	1.00	9.55	C
ATOM	992	O	ARG	A	218	-1.431	12.118	11.429	1.00	8.04	O
ATOM	993	CB	ARG	A	218	-0.644	15.065	11.087	1.00	9.92	C
ATOM	994	CG	ARG	A	218	0.727	15.180	10.422	1.00	12.76	C
ATOM	995	CD	ARG	A	218	1.728	15.977	11.253	1.00	10.15	C
ATOM	996	NE	ARG	A	218	1.237	17.334	11.507	1.00	11.99	N
ATOM	997	CZ	ARG	A	218	1.944	18.259	12.160	1.00	13.54	C
ATOM	998	NH1	ARG	A	218	3.164	17.975	12.601	1.00	12.59	N
ATOM	999	NH2	ARG	A	218	1.452	19.476	12.384	1.00	10.56	N
ATOM	1000	N	THR	A	219	-0.697	12.195	9.276	1.00	7.51	N
ATOM	1001	CA	THR	A	219	-0.395	10.762	9.218	1.00	8.29	C
ATOM	1002	C	THR	A	219	1.046	10.497	8.809	1.00	8.47	C
ATOM	1003	O	THR	A	219	1.514	10.933	7.766	1.00	6.27	O
ATOM	1004	CB	THR	A	219	-1.359	10.093	8.215	1.00	8.28	C
ATOM	1005	OG1	THR	A	219	-2.725	10.291	8.627	1.00	7.46	O
ATOM	1006	CG2	THR	A	219	-1.118	8.588	8.121	1.00	8.07	C
ATOM	1007	N	ILE	A	220	1.781	9.799	9.677	1.00	7.04	N
ATOM	1008	CA	ILE	A	220	3.192	9.486	9.398	1.00	7.74	C
ATOM	1009	C	ILE	A	220	3.272	8.026	8.982	1.00	6.46	C
ATOM	1010	O	ILE	A	220	2.739	7.170	9.692	1.00	5.26	O
ATOM	1011	CB	ILE	A	220	4.044	9.834	10.625	1.00	7.97	C
ATOM	1012	CG1	ILE	A	220	3.943	11.354	10.891	1.00	9.58	C
ATOM	1013	CG2	ILE	A	220	5.493	9.406	10.446	1.00	8.88	C
ATOM	1014	CD1	ILE	A	220	4.225	11.767	12.324	1.00	11.24	C
ATOM	1015	N	LEU	A	221	3.910	7.730	7.846	1.00	4.42	N
ATOM	1016	CA	LEU	A	221	4.010	6.376	7.365	1.00	6.25	C
ATOM	1017	C	LEU	A	221	5.442	5.863	7.213	1.00	8.14	C
ATOM	1018	O	LEU	A	221	6.346	6.579	6.779	1.00	7.11	O
ATOM	1019	CB	LEU	A	221	3.407	6.243	5.931	1.00	6.11	C
ATOM	1020	CG	LEU	A	221	1.985	6.793	5.768	1.00	8.34	C
ATOM	1021	CD1	LEU	A	221	1.566	6.788	4.300	1.00	8.35	C
ATOM	1022	CD2	LEU	A	221	0.973	5.975	6.577	1.00	4.68	C
ATOM	1023	N	VAL	A	222	5.592	4.582	7.549	1.00	5.20	N
ATOM	1024	CA	VAL	A	222	6.867	3.906	7.304	1.00	5.61	C
ATOM	1025	C	VAL	A	222	6.541	3.014	6.099	1.00	5.98	C
ATOM	1026	O	VAL	A	222	5.570	2.247	6.152	1.00	6.56	O
ATOM	1027	CB	VAL	A	222	7.393	3.085	8.477	1.00	8.41	C
ATOM	1028	CG1	VAL	A	222	8.539	2.173	8.068	1.00	6.12	C
ATOM	1029	CG2	VAL	A	222	7.894	4.027	9.576	1.00	6.69	C
ATOM	1030	N	ILE	A	223	7.297	3.159	5.014	1.00	6.12	N
ATOM	1031	CA	ILE	A	223	7.018	2.373	3.826	1.00	5.11	C
ATOM	1032	C	ILE	A	223	7.865	1.110	3.763	1.00	6.29	C
ATOM	1033	O	ILE	A	223	9.086	1.170	3.619	1.00	5.79	O
ATOM	1034	CB	ILE	A	223	7.239	3.173	2.517	1.00	5.92	C
ATOM	1035	CG1	ILE	A	223	6.440	4.490	2.557	1.00	5.92	C
ATOM	1036	CG2	ILE	A	223	6.843	2.332	1.305	1.00	9.29	C
ATOM	1037	CD1	ILE	A	223	4.940	4.302	2.735	1.00	3.99	C
ATOM	1038	N	GLU	A	224	7.174	-0.023	3.783	1.00	7.38	N
ATOM	1039	CA	GLU	A	224	7.718	-1.348	3.561	1.00	5.45	C
ATOM	1040	C	GLU	A	224	9.063	-1.750	4.140	1.00	6.90	C
ATOM	1041	O	GLU	A	224	10.090	-1.913	3.466	1.00	5.04	O
ATOM	1042	CB	GLU	A	224	7.752	-1.568	2.032	1.00	6.41	C
ATOM	1043	CG	GLU	A	224	6.387	-1.497	1.317	1.00	4.81	C
ATOM	1044	CD	GLU	A	224	5.466	-2.652	1.652	1.00	6.84	C
ATOM	1045	OE1	GLU	A	224	5.958	-3.707	2.120	1.00	6.22	O
ATOM	1046	OE2	GLU	A	224	4.237	-2.557	1.460	1.00	5.52	O
ATOM	1047	N	PRO	A	225	9.084	-2.095	5.423	1.00	6.71	N
ATOM	1048	CA	PRO	A	225	10.274	-2.656	6.051	1.00	8.09	C
ATOM	1049	C	PRO	A	225	10.767	-3.901	5.313	1.00	10.00	C
ATOM	1050	O	PRO	A	225	10.009	-4.657	4.678	1.00	7.14	O
ATOM	1051	CB	PRO	A	225	9.770	-3.045	7.438	1.00	9.09	C
ATOM	1052	CG	PRO	A	225	8.619	-2.126	7.711	1.00	7.49	C
ATOM	1053	CD	PRO	A	225	7.926	-1.993	6.363	1.00	6.45	C
ATOM	1054	N	ASP	A	226	12.084	-4.153	5.348	1.00	10.93	N
ATOM	1055	CA	ASP	A	226	12.639	-5.358	4.718	1.00	10.38	C
ATOM	1056	C	ASP	A	226	12.259	-5.464	3.249	1.00	10.37	C
ATOM	1057	O	ASP	A	226	11.984	-6.559	2.750	1.00	10.02	O
ATOM	1058	CB	ASP	A	226	12.172	-6.595	5.489	1.00	13.13	C
ATOM	1059	CG	AASP	A	226	12.883	-7.895	5.169	0.50	11.23	C
ATOM	1060	CG	BASP	A	226	12.838	-6.714	6.844	0.50	16.23	C

	ATOM	1061	OD2A	ASP	A	226	12.269	-8.989	5.193	0.50	7.45	O
	ATOM	1062	OD2B	ASP	A	226	13.364	-5.720	7.384	0.50	17.41	O
	ATOM	1063	OD1A	ASP	A	226	14.097	-7.854	4.880	0.50	10.95	O
	ATOM	1064	OD1B	ASP	A	226	12.859	-7.821	7.414	0.50	18.21	O
	ATOM	1065	N	SER	A	227	12.377	-4.362	2.506	1.00	7.14	N
	ATOM	1066	CA	SER	A	227	12.089	-4.405	1.069	1.00	8.07	C
	ATOM	1067	C	SER	A	227	13.321	-3.964	0.290	1.00	8.60	C
	ATOM	1068	O	SER	A	227	14.169	-4.804	-0.011	1.00	7.25	O
	ATOM	1069	CB	SER	A	227	10.844	-3.643	0.674	1.00	8.53	C
	ATOM	1070	OG	SER	A	227	10.899	-2.242	0.929	1.00	6.19	O
	ATOM	1071	N	LEU	A	228	13.467	-2.671	0.005	1.00	9.78	N
	ATOM	1072	CA	LEU	A	228	14.606	-2.190	-0.765	1.00	10.16	C
	ATOM	1073	C	LEU	A	228	15.971	-2.396	-0.150	1.00	11.89	C
	ATOM	1074	O	LEU	A	228	16.936	-2.500	-0.923	1.00	9.90	O
	ATOM	1075	CB	LEU	A	228	14.415	-0.717	-1.154	1.00	12.52	C
	ATOM	1076	CG	LEU	A	228	13.187	-0.457	-2.044	1.00	10.94	C
	ATOM	1077	CD1	LEU	A	228	13.015	1.032	-2.258	1.00	10.51	C
	ATOM	1078	CD2	LEU	A	228	13.333	-1.187	-3.379	1.00	12.27	C
	ATOM	1079	N	ALA	A	229	16.106	-2.590	1.158	1.00	10.91	N
	ATOM	1080	CA	ALA	A	229	17.402	-2.905	1.755	1.00	10.73	C
	ATOM	1081	C	ALA	A	229	17.939	-4.214	1.165	1.00	9.94	C
	ATOM	1082	O	ALA	A	229	19.151	-4.412	1.091	1.00	8.43	O
	ATOM	1083	CB	ALA	A	229	17.331	-3.029	3.270	1.00	10.39	C
	ATOM	1084	N	ASN	A	230	17.043	-5.134	0.796	1.00	10.02	N
	ATOM	1085	CA	ASN	A	230	17.402	-6.383	0.154	1.00	9.78	C
	ATOM	1086	C	ASN	A	230	18.080	-6.167	-1.190	1.00	11.01	C
	ATOM	1087	O	ASN	A	230	18.924	-6.985	-1.607	1.00	8.16	O
	ATOM	1088	CB	ASN	A	230	16.180	-7.289	-0.076	1.00	10.90	C
	ATOM	1089	CG	ASN	A	230	15.665	-7.868	1.232	1.00	13.68	C
	ATOM	1090	OD1	ASN	A	230	16.356	-8.610	1.937	1.00	11.06	O
	ATOM	1091	ND2	ASN	A	230	14.437	-7.511	1.589	1.00	15.05	N
	ATOM	1092	N	MET	A	231	17.715	-5.091	-1.899	1.00	9.45	N
	ATOM	1093	CA	MET	A	231	18.340	-4.808	-3.192	1.00	10.59	C
	ATOM	1094	C	MET	A	231	19.808	-4.410	-3.053	1.00	10.84	C
	ATOM	1095	O	MET	A	231	20.564	-4.461	-4.022	1.00	12.21	O
	ATOM	1096	CB	MET	A	231	17.608	-3.666	-3.919	1.00	12.34	C
	ATOM	1097	CG	MET	A	231	16.450	-4.121	-4.794	1.00	15.64	C
	ATOM	1098	SD	MET	A	231	15.058	-4.853	-3.927	1.00	11.65	S
	ATOM	1099	CE	MET	A	231	15.413	-6.601	-3.854	1.00	13.16	C
	ATOM	1100	N	VAL	A	232	20.200	-3.884	-1.900	1.00	11.74	N
	ATOM	1101	CA	VAL	A	232	21.588	-3.474	-1.680	1.00	11.04	C
	ATOM	1102	C	VAL	A	232	22.452	-4.703	-1.472	1.00	11.67	C
	ATOM	1103	O	VAL	A	232	23.484	-4.871	-2.124	1.00	13.75	O
	ATOM	1104	CB	VAL	A	232	21.697	-2.530	-0.458	1.00	10.10	C
	ATOM	1105	CG1	VAL	A	232	23.134	-2.096	-0.176	1.00	12.45	C
	ATOM	1106	CG2	VAL	A	232	20.817	-1.303	-0.703	1.00	10.12	C
	ATOM	1107	N	THR	A	233	22.042	-5.620	-0.579	1.00	11.16	N
	ATOM	1108	CA	THR	A	233	22.885	-6.754	-0.252	1.00	11.44	C
	ATOM	1109	C	THR	A	233	22.409	-8.159	-0.569	1.00	12.43	C
	ATOM	1110	O	THR	A	233	23.254	-9.071	-0.499	1.00	13.82	O
	ATOM	1111	CB	THR	A	233	23.152	-6.773	1.286	1.00	12.21	C
	ATOM	1112	OG1	THR	A	233	21.935	-7.075	1.982	1.00	11.48	O
	ATOM	1113	CG2	THR	A	233	23.726	-5.458	1.773	1.00	12.53	C
	ATOM	1114	N	ASN	A	234	21.127	-8.356	-0.818	1.00	11.88	N
	ATOM	1115	CA	ASN	A	234	20.616	-9.717	-0.990	1.00	13.01	C
	ATOM	1116	C	ASN	A	234	20.192	-10.087	-2.389	1.00	13.03	C
	ATOM	1117	O	ASN	A	234	19.417	-11.045	-2.547	1.00	12.32	O
	ATOM	1118	CB	ASN	A	234	19.422	-9.917	-0.011	1.00	11.09	C
	ATOM	1119	CG	ASN	A	234	19.900	-9.933	1.425	1.00	12.72	C
	ATOM	1120	OD1	ASN	A	234	21.021	-10.376	1.709	1.00	15.41	O
	ATOM	1121	ND2	ASN	A	234	19.083	-9.488	2.364	1.00	11.44	N
	ATOM	1122	N	MET	A	235	20.732	-9.438	-3.422	1.00	13.27	N
	ATOM	1123	CA	MET	A	235	20.423	-9.806	-4.801	1.00	15.84	C
	ATOM	1124	C	MET	A	235	20.991	-11.142	-5.243	1.00	16.75	C
	ATOM	1125	O	MET	A	235	20.510	-11.707	-6.236	1.00	16.47	O
	ATOM	1126	CB	MET	A	235	20.954	-8.728	-5.757	1.00	16.88	C
	ATOM	1127	CG	MET	A	235	20.264	-7.389	-5.527	1.00	19.25	C
	ATOM	1128	SD	MET	A	235	18.530	-7.530	-6.067	1.00	18.42	S
	ATOM	1129	CE	MET	A	235	18.808	-7.014	-7.770	1.00	13.39	C
	ATOM	1130	N	ASN	A	236	21.905	-11.734	-4.466	1.00	16.70	N
	ATOM	1131	CA	ASN	A	236	22.385	-13.080	-4.752	1.00	18.69	C
	ATOM	1132	C	ASN	A	236	21.281	-14.103	-4.516	1.00	17.60	C

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ATOM   1133  O   ASN A 236      21.370 -15.234  -5.014  1.00 19.39           O
ATOM   1134  CB  ASN A 236      23.592 -13.434  -3.878  1.00 24.86           C
ATOM   1135  CG  ASN A 236      23.375 -13.190  -2.401  1.00 29.76           C
ATOM   1136  OD1 ASN A 236      23.012 -12.095  -1.965  1.00 30.79           O
ATOM   1137  ND2 ASN A 236      23.608 -14.195  -1.564  1.00 32.96           N
ATOM   1138  N   VAL A 237      20.265 -13.744  -3.720  1.00 12.86           N
ATOM   1139  CA  VAL A 237      19.159 -14.656  -3.440  1.00 10.84           C
ATOM   1140  C   VAL A 237      18.199 -14.566  -4.601  1.00 10.77           C
ATOM   1141  O   VAL A 237      17.678 -13.470  -4.874  1.00  8.02           O
ATOM   1142  CB  VAL A 237      18.450 -14.269  -2.128  1.00 12.65           C
ATOM   1143  CG1 VAL A 237      17.229 -15.166  -1.897  1.00  9.59           C
ATOM   1144  CG2 VAL A 237      19.411 -14.335  -0.951  1.00 12.38           C
ATOM   1145  N   PRO A 238      17.933 -15.670  -5.290  1.00 11.53           N
ATOM   1146  CA  PRO A 238      17.135 -15.606  -6.508  1.00 13.54           C
ATOM   1147  C   PRO A 238      15.788 -14.927  -6.356  1.00 13.33           C
ATOM   1148  O   PRO A 238      15.396 -14.168  -7.260  1.00 11.57           O
ATOM   1149  CB  PRO A 238      17.065 -17.067  -6.975  1.00 14.34           C
ATOM   1150  CG  PRO A 238      18.402 -17.598  -6.532  1.00 13.36           C
ATOM   1151  CD  PRO A 238      18.597 -16.987  -5.147  1.00 12.77           C
ATOM   1152  N   LYS A 239      15.057 -15.133  -5.272  1.00  9.72           N
ATOM   1153  CA  LYS A 239      13.747 -14.485  -5.107  1.00 11.18           C
ATOM   1154  C   LYS A 239      13.898 -12.963  -5.032  1.00 11.25           C
ATOM   1155  O   LYS A 239      13.080 -12.221  -5.597  1.00 10.72           O
ATOM   1156  CB  LYS A 239      13.000 -15.028  -3.895  1.00 11.60           C
ATOM   1157  CG  LYS A 239      11.556 -14.534  -3.816  1.00  9.45           C
ATOM   1158  CD  LYS A 239      10.745 -15.325  -2.815  1.00 12.82           C
ATOM   1159  CE  LYS A 239       9.280 -14.874  -2.783  1.00 11.28           C
ATOM   1160  NZ  LYS A 239       8.531 -15.664  -1.755  1.00 13.11           N
ATOM   1161  N   CYS A 240      14.998 -12.503  -4.454  1.00  9.32           N
ATOM   1162  CA  CYS A 240      15.282 -11.070  -4.374  1.00 11.03           C
ATOM   1163  C   CYS A 240      15.647 -10.495  -5.727  1.00 11.24           C
ATOM   1164  O   CYS A 240      15.131  -9.438  -6.097  1.00 11.81           O
ATOM   1165  CB  CYS A 240      16.353 -10.776  -3.337  1.00 11.15           C
ATOM   1166  SG  CYS A 240      15.880 -10.935  -1.606  1.00 10.16           S
ATOM   1167  N   SER A 241      16.485 -11.187  -6.535  1.00 11.59           N
ATOM   1168  CA  SER A 241      16.794 -10.609  -7.842  1.00 10.98           C
ATOM   1169  C   SER A 241      15.546 -10.620  -8.721  1.00 12.23           C
ATOM   1170  O   SER A 241      15.364  -9.712  -9.539  1.00 10.81           O
ATOM   1171  CB  SER A 241      17.975 -11.312  -8.522  1.00 14.36           C
ATOM   1172  OG  SER A 241      17.623 -12.670  -8.727  1.00 17.92           O
ATOM   1173  N   GLY A 242      14.682 -11.620  -8.525  1.00  9.61           N
ATOM   1174  CA  GLY A 242      13.437 -11.713  -9.280  1.00 11.36           C
ATOM   1175  C   GLY A 242      12.417 -10.676  -8.821  1.00  9.27           C
ATOM   1176  O   GLY A 242      11.547 -10.289  -9.600  1.00  9.69           O
ATOM   1177  N   ALA A 243      12.504 -10.218  -7.577  1.00  8.27           N
ATOM   1178  CA  ALA A 243      11.534  -9.251  -7.064  1.00  9.72           C
ATOM   1179  C   ALA A 243      11.966  -7.798  -7.195  1.00  9.87           C
ATOM   1180  O   ALA A 243      11.124  -6.889  -7.101  1.00  7.13           O
ATOM   1181  CB  ALA A 243      11.322  -9.519  -5.570  1.00  9.32           C
ATOM   1182  N   ALA A 244      13.264  -7.577  -7.399  1.00  9.86           N
ATOM   1183  CA  ALA A 244      13.819  -6.236  -7.422  1.00  9.88           C
ATOM   1184  C   ALA A 244      13.058  -5.229  -8.259  1.00  9.98           C
ATOM   1185  O   ALA A 244      12.794  -4.128  -7.758  1.00  8.52           O
ATOM   1186  CB  ALA A 244      15.293  -6.280  -7.855  1.00  8.30           C
ATOM   1187  N   SER A 245      12.827  -5.478  -9.557  1.00  9.52           N
ATOM   1188  CA  SER A 245      12.158  -4.461 -10.365  1.00 10.82           C
ATOM   1189  C   SER A 245      10.756  -4.175  -9.832  1.00 11.56           C
ATOM   1190  O   SER A 245      10.316  -3.022  -9.846  1.00 11.54           O
ATOM   1191  CB  SER A 245      12.087  -4.828 -11.856  1.00 11.02           C
ATOM   1192  OG ASER A 245      11.406  -6.064 -12.001  0.50 13.46           O
ATOM   1193  OG BSER A 245      13.372  -4.621 -12.429  0.50 11.05           O
ATOM   1194  N   THR A 246      10.041  -5.209  -9.369  1.00 10.04           N
ATOM   1195  CA  THR A 246       8.708  -5.019  -8.815  1.00 10.31           C
ATOM   1196  C   THR A 246       8.746  -4.210  -7.530  1.00  8.77           C
ATOM   1197  O   THR A 246       7.950  -3.275  -7.371  1.00  9.85           O
ATOM   1198  CB  THR A 246       8.040  -6.387  -8.524  1.00 11.56           C
ATOM   1199  OG1 THR A 246       7.898  -7.080  -9.757  1.00  9.95           O
ATOM   1200  CG2 THR A 246       6.675  -6.177  -7.889  1.00 13.88           C
ATOM   1201  N   TYR A 247       9.687  -4.501  -6.633  1.00  7.35           N
ATOM   1202  CA  TYR A 247       9.820  -3.680  -5.425  1.00  5.31           C
ATOM   1203  C   TYR A 247      10.095  -2.223  -5.818  1.00  8.45           C
ATOM   1204  O   TYR A 247       9.554  -1.322  -5.174  1.00  8.15           O
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ATOM   1205  CB  TYR A 247      10.964  -4.149  -4.543  1.00  7.25           C
ATOM   1206  CG  TYR A 247      10.812  -5.356  -3.654  1.00  5.93           C
ATOM   1207  CD1 TYR A 247       9.760  -6.251  -3.782  1.00  7.84           C
ATOM   1208  CD2 TYR A 247      11.782  -5.599  -2.687  1.00  5.89           C
ATOM   1209  CE1 TYR A 247       9.683  -7.359  -2.943  1.00  8.77           C
ATOM   1210  CE2 TYR A 247      11.738  -6.708  -1.864  1.00  7.30           C
ATOM   1211  CZ  TYR A 247      10.670  -7.583  -2.005  1.00  8.15           C
ATOM   1212  OH  TYR A 247      10.621  -8.706  -1.200  1.00  9.79           O
ATOM   1213  N   ARG A 248      10.955  -1.993  -6.806  1.00  9.34           N
ATOM   1214  CA  ARG A 248      11.263  -0.611  -7.196  1.00 10.80           C
ATOM   1215  C   ARG A 248      10.000   0.067  -7.725  1.00 10.45           C
ATOM   1216  O   ARG A 248       9.688   1.163  -7.285  1.00  8.94           O
ATOM   1217  CB  ARG A 248      12.402  -0.503  -8.214  1.00 12.72           C
ATOM   1218  CG AARG A 248      12.641   0.928  -8.699  0.50 12.38           C
ATOM   1219  CG BARG A 248      12.270   0.660  -9.186  0.50 17.76           C
ATOM   1220  CD AARG A 248      13.730   1.057  -9.756  0.50 15.55           C
ATOM   1221  CD BARG A 248      13.565   0.956  -9.942  0.50 22.28           C
ATOM   1222  NE AARG A 248      13.710   2.362 -10.429  0.50 12.89           N
ATOM   1223  NE BARG A 248      13.843   2.384  -9.730  0.50 25.14           N
ATOM   1224  CZ AARG A 248      12.903   2.720 -11.413  0.50 14.27           C
ATOM   1225  CZ BARG A 248      15.026   2.886  -9.411  0.50 24.43           C
ATOM   1226  NH1AARG A 248      12.018   1.864 -11.921  0.50 15.68           N
ATOM   1227  NH1BARG A 248      16.065   2.069  -9.294  0.50 27.65           N
ATOM   1228  NH2AARG A 248      12.932   3.945 -11.929  0.50 12.72           N
ATOM   1229  NH2BARG A 248      15.171   4.186  -9.194  0.50 20.27           N
ATOM   1230  N   GLU A 249       9.334  -0.560  -8.699  1.00  9.14           N
ATOM   1231  CA  GLU A 249       8.155   0.007  -9.324  1.00 11.86           C
ATOM   1232  C   GLU A 249       7.014   0.270  -8.342  1.00 11.04           C
ATOM   1233  O   GLU A 249       6.338   1.299  -8.404  1.00  9.44           O
ATOM   1234  CB  GLU A 249       7.639  -0.907 -10.447  1.00 15.60           C
ATOM   1235  CG  GLU A 249       6.258  -0.557 -10.968  1.00 26.28           C
ATOM   1236  CD  GLU A 249       5.399  -1.675 -11.504  1.00 34.08           C
ATOM   1237  OE1 GLU A 249       5.717  -2.882 -11.348  1.00 36.44           O
ATOM   1238  OE2 GLU A 249       4.334  -1.373 -12.103  1.00 37.85           O
ATOM   1239  N   LEU A 250       6.764  -0.682  -7.457  1.00  8.69           N
ATOM   1240  CA  LEU A 250       5.690  -0.555  -6.480  1.00  8.28           C
ATOM   1241  C   LEU A 250       6.018   0.439  -5.377  1.00 10.64           C
ATOM   1242  O   LEU A 250       5.113   1.137  -4.916  1.00 10.39           O
ATOM   1243  CB  LEU A 250       5.318  -1.931  -5.922  1.00 11.06           C
ATOM   1244  CG  LEU A 250       4.659  -2.872  -6.942  1.00  9.15           C
ATOM   1245  CD1 LEU A 250       4.275  -4.171  -6.250  1.00  6.98           C
ATOM   1246  CD2 LEU A 250       3.457  -2.211  -7.617  1.00  6.07           C
ATOM   1247  N   THR A 251       7.293   0.585  -5.017  1.00  8.51           N
ATOM   1248  CA  THR A 251       7.668   1.608  -4.035  1.00  7.50           C
ATOM   1249  C   THR A 251       7.401   2.978  -4.660  1.00  7.68           C
ATOM   1250  O   THR A 251       6.779   3.872  -4.055  1.00  8.26           O
ATOM   1251  CB  THR A 251       9.146   1.452  -3.629  1.00  8.52           C
ATOM   1252  OG1 THR A 251       9.332   0.179  -2.992  1.00 10.75           O
ATOM   1253  CG2 THR A 251       9.555   2.553  -2.655  1.00  4.33           C
ATOM   1254  N   ILE A 252       7.818   3.173  -5.907  1.00  7.33           N
ATOM   1255  CA  ILE A 252       7.574   4.449  -6.601  1.00  8.12           C
ATOM   1256  C   ILE A 252       6.080   4.720  -6.667  1.00  9.23           C
ATOM   1257  O   ILE A 252       5.616   5.821  -6.332  1.00  9.66           O
ATOM   1258  CB  ILE A 252       8.260   4.512  -7.979  1.00  8.41           C
ATOM   1259  CG1 ILE A 252       9.776   4.518  -7.776  1.00  5.97           C
ATOM   1260  CG2 ILE A 252       7.819   5.776  -8.726  1.00  6.79           C
ATOM   1261  CD1 ILE A 252      10.655   4.280  -8.990  1.00  6.68           C
ATOM   1262  N   TYR A 253       5.291   3.723  -7.045  1.00 10.43           N
ATOM   1263  CA  TYR A 253       3.842   3.829  -7.063  1.00 10.43           C
ATOM   1264  C   TYR A 253       3.309   4.297  -5.716  1.00 10.13           C
ATOM   1265  O   TYR A 253       2.536   5.241  -5.660  1.00  9.33           O
ATOM   1266  CB  TYR A 253       3.209   2.467  -7.421  1.00  9.73           C
ATOM   1267  CG  TYR A 253       1.724   2.557  -7.706  1.00 11.41           C
ATOM   1268  CD1 TYR A 253       1.269   3.034  -8.937  1.00 12.68           C
ATOM   1269  CD2 TYR A 253       0.792   2.164  -6.755  1.00  8.44           C
ATOM   1270  CE1 TYR A 253      -0.094   3.112  -9.195  1.00 11.16           C
ATOM   1271  CE2 TYR A 253      -0.571   2.232  -7.008  1.00  8.64           C
ATOM   1272  CZ  TYR A 253      -0.994   2.699  -8.245  1.00 11.35           C
ATOM   1273  OH  TYR A 253      -2.341   2.787  -8.502  1.00 11.75           O
ATOM   1274  N   ALA A 254       3.717   3.682  -4.614  1.00  8.28           N
ATOM   1275  CA  ALA A 254       3.283   4.028  -3.275  1.00  7.14           C
ATOM   1276  C   ALA A 254       3.718   5.439  -2.900  1.00  8.13           C
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	ATOM	1277	O	ALA	A	254	2.916	6.216	-2.381	1.00	7.26	O
	ATOM	1278	CB	ALA	A	254	3.864	3.041	-2.265	1.00	11.06	C
	ATOM	1279	N	LEU	A	255	4.971	5.802	-3.195	1.00	7.07	N
	ATOM	1280	CA	LEU	A	255	5.439	7.156	-2.874	1.00	6.68	C
5	ATOM	1281	C	LEU	A	255	4.602	8.225	-3.576	1.00	9.25	C
	ATOM	1282	O	LEU	A	255	4.363	9.299	-3.015	1.00	8.62	O
	ATOM	1283	CB	LEU	A	255	6.916	7.283	-3.245	1.00	8.51	C
	ATOM	1284	CG	LEU	A	255	7.906	6.351	-2.519	1.00	6.84	C
	ATOM	1285	CD1	LEU	A	255	9.335	6.656	-2.942	1.00	9.42	C
10	ATOM	1286	CD2	LEU	A	255	7.832	6.506	-1.008	1.00	5.35	C
	ATOM	1287	N	LYS	A	256	4.247	8.010	-4.847	1.00	6.95	N
	ATOM	1288	CA	LYS	A	256	3.397	9.002	-5.523	1.00	9.07	C
	ATOM	1289	C	LYS	A	256	1.946	8.953	-5.105	1.00	9.44	C
	ATOM	1290	O	LYS	A	256	1.285	10.005	-4.937	1.00	7.99	O
15	ATOM	1291	CB	LYS	A	256	3.519	8.828	-7.051	1.00	9.73	C
	ATOM	1292	CG	LYS	A	256	4.942	9.110	-7.521	1.00	11.89	C
	ATOM	1293	CD	LYS	A	256	5.192	8.569	-8.919	1.00	20.28	C
	ATOM	1294	CE	LYS	A	256	4.745	9.547	-9.986	1.00	24.47	C
	ATOM	1295	NZ	LYS	A	256	5.634	9.467	-11.186	1.00	26.97	N
20	ATOM	1296	N	GLN	A	257	1.329	7.775	-4.920	1.00	10.04	N
	ATOM	1297	CA	GLN	A	257	-0.096	7.720	-4.550	1.00	10.34	C
	ATOM	1298	C	GLN	A	257	-0.391	8.176	-3.129	1.00	11.61	C
	ATOM	1299	O	GLN	A	257	-1.497	8.611	-2.839	1.00	9.42	O
	ATOM	1300	CB	GLN	A	257	-0.566	6.279	-4.767	1.00	12.04	C
25	ATOM	1301	CG	GLN	A	257	-0.662	5.908	-6.251	1.00	14.99	C
	ATOM	1302	CD	GLN	A	257	-1.847	6.614	-6.908	1.00	18.94	C
	ATOM	1303	OE1	GLN	A	257	-3.002	6.344	-6.559	1.00	24.20	O
	ATOM	1304	NE2	GLN	A	257	-1.532	7.503	-7.813	1.00	21.56	N
	ATOM	1305	N	LEU	A	258	0.652	8.046	-2.285	1.00	8.27	N
30	ATOM	1306	CA	LEU	A	258	0.472	8.455	-0.883	1.00	9.74	C
	ATOM	1307	C	LEU	A	258	1.091	9.816	-0.603	1.00	7.64	C
	ATOM	1308	O	LEU	A	258	1.143	10.255	0.547	1.00	7.79	O
	ATOM	1309	CB	LEU	A	258	0.984	7.399	0.098	1.00	7.61	C
	ATOM	1310	CG	LEU	A	258	0.386	5.990	-0.168	1.00	7.82	C
35	ATOM	1311	CD1	LEU	A	258	0.997	5.000	0.800	1.00	8.98	C
	ATOM	1312	CD2	LEU	A	258	-1.135	6.032	-0.040	1.00	6.93	C
	ATOM	1313	N	ASP	A	259	1.437	10.543	-1.660	1.00	9.21	N
	ATOM	1314	CA	ASP	A	259	1.980	11.894	-1.564	1.00	9.04	C
	ATOM	1315	C	ASP	A	259	0.809	12.868	-1.385	1.00	9.52	C
40	ATOM	1316	O	ASP	A	259	0.303	13.450	-2.340	1.00	8.58	O
	ATOM	1317	CB	ASP	A	259	2.768	12.227	-2.832	1.00	8.93	C
	ATOM	1318	CG	ASP	A	259	3.337	13.635	-2.841	1.00	11.25	C
	ATOM	1319	OD1	ASP	A	259	3.548	14.222	-1.757	1.00	8.51	O
	ATOM	1320	OD2	ASP	A	259	3.597	14.170	-3.940	1.00	6.70	O
45	ATOM	1321	N	LEU	A	260	0.351	12.990	-0.147	1.00	8.63	N
	ATOM	1322	CA	LEU	A	260	-0.790	13.836	0.201	1.00	8.38	C
	ATOM	1323	C	LEU	A	260	-0.343	14.900	1.191	1.00	6.27	C
	ATOM	1324	O	LEU	A	260	0.561	14.654	1.982	1.00	7.26	O
	ATOM	1325	CB	LEU	A	260	-1.854	12.950	0.855	1.00	6.89	C
50	ATOM	1326	CG	LEU	A	260	-2.359	11.781	-0.005	1.00	4.65	C
	ATOM	1327	CD1	LEU	A	260	-3.267	10.858	0.805	1.00	7.42	C
	ATOM	1328	CD2	LEU	A	260	-3.133	12.333	-1.200	1.00	9.69	C
	ATOM	1329	N	PRO	A	261	-0.949	16.078	1.156	1.00	8.32	N
	ATOM	1330	CA	PRO	A	261	-0.548	17.206	1.974	1.00	8.79	C
55	ATOM	1331	C	PRO	A	261	-0.417	16.955	3.463	1.00	7.80	C
	ATOM	1332	O	PRO	A	261	0.421	17.587	4.112	1.00	7.02	O
	ATOM	1333	CB	PRO	A	261	-1.664	18.235	1.687	1.00	8.92	C
	ATOM	1334	CG	PRO	A	261	-1.893	17.995	0.216	1.00	11.25	C
	ATOM	1335	CD	PRO	A	261	-1.933	16.474	0.102	1.00	7.59	C
60	ATOM	1336	N	HIS	A	262	-1.221	16.080	4.059	1.00	6.58	N
	ATOM	1337	CA	HIS	A	262	-1.175	15.789	5.475	1.00	7.08	C
	ATOM	1338	C	HIS	A	262	-0.362	14.555	5.842	1.00	8.37	C
	ATOM	1339	O	HIS	A	262	-0.404	14.132	7.007	1.00	8.87	O
	ATOM	1340	CB	HIS	A	262	-2.606	15.587	6.014	1.00	6.94	C
65	ATOM	1341	CG	HIS	A	262	-3.300	14.397	5.408	1.00	7.70	C
	ATOM	1342	ND1	HIS	A	262	-3.671	14.326	4.078	1.00	9.51	N
	ATOM	1343	CD2	HIS	A	262	-3.715	13.238	5.983	1.00	8.94	C
	ATOM	1344	CE1	HIS	A	262	-4.272	13.170	3.862	1.00	7.83	C
	ATOM	1345	NE2	HIS	A	262	-4.350	12.500	5.011	1.00	7.29	N
70	ATOM	1346	N	VAL	A	263	0.373	13.988	4.901	1.00	8.17	N
	ATOM	1347	CA	VAL	A	263	1.167	12.796	5.115	1.00	7.47	C
	ATOM	1348	C	VAL	A	263	2.671	13.092	5.100	1.00	10.21	C

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ATOM   1349  O   VAL A 263       3.141  13.969   4.381  1.00  7.85           O
ATOM   1350  CB  VAL A 263       0.883  11.756   4.004  1.00  7.89           C
ATOM   1351  CG1 VAL A 263       1.834  10.579   4.025  1.00  7.91           C
ATOM   1352  CG2 VAL A 263      -0.548  11.206   4.113  1.00  6.51           C
ATOM   1353  N   ALA A 264       3.434  12.300   5.848  1.00  6.28           N
ATOM   1354  CA  ALA A 264       4.872  12.311   5.829  1.00  6.81           C
ATOM   1355  C   ALA A 264       5.278  10.833   5.635  1.00  7.80           C
ATOM   1356  O   ALA A 264       4.767   9.998   6.380  1.00 10.65           O
ATOM   1357  CB  ALA A 264       5.544  12.819   7.089  1.00  6.72           C
ATOM   1358  N   MET A 265       6.148  10.541   4.691  1.00  5.71           N
ATOM   1359  CA  MET A 265       6.595   9.167   4.502  1.00  7.12           C
ATOM   1360  C   MET A 265       8.090   8.992   4.768  1.00  8.32           C
ATOM   1361  O   MET A 265       8.894   9.841   4.397  1.00  9.40           O
ATOM   1362  CB  MET A 265       6.352   8.707   3.058  1.00  7.47           C
ATOM   1363  CG  MET A 265       4.936   8.211   2.771  1.00  7.41           C
ATOM   1364  SD  MET A 265       4.708   7.866   1.001  1.00  5.91           S
ATOM   1365  CE  MET A 265       4.504   9.530   0.382  1.00  6.40           C
ATOM   1366  N   TYR A 266       8.448   7.873   5.397  1.00  5.61           N
ATOM   1367  CA  TYR A 266       9.823   7.463   5.616  1.00  6.24           C
ATOM   1368  C   TYR A 266      10.029   6.067   5.014  1.00  5.80           C
ATOM   1369  O   TYR A 266       9.327   5.139   5.424  1.00  5.17           O
ATOM   1370  CB  TYR A 266      10.158   7.399   7.111  1.00  7.31           C
ATOM   1371  CG  TYR A 266      10.084   8.745   7.806  1.00  6.53           C
ATOM   1372  CD1 TYR A 266       8.850   9.207   8.285  1.00  5.70           C
ATOM   1373  CD2 TYR A 266      11.194   9.556   7.963  1.00  6.84           C
ATOM   1374  CE1 TYR A 266       8.770  10.426   8.920  1.00  9.26           C
ATOM   1375  CE2 TYR A 266      11.090  10.785   8.587  1.00  6.80           C
ATOM   1376  CZ  TYR A 266       9.879  11.226   9.065  1.00  8.64           C
ATOM   1377  OH  TYR A 266       9.765  12.463   9.705  1.00  5.96           O
ATOM   1378  N   MET A 267      10.904   5.915   4.037  1.00  4.22           N
ATOM   1379  CA  MET A 267      11.160   4.616   3.435  1.00  6.69           C
ATOM   1380  C   MET A 267      12.027   3.777   4.380  1.00  6.85           C
ATOM   1381  O   MET A 267      12.956   4.352   4.958  1.00  4.90           O
ATOM   1382  CB  MET A 267      11.906   4.723   2.104  1.00  5.80           C
ATOM   1383  CG  MET A 267      10.954   5.071   0.954  1.00  7.99           C
ATOM   1384  SD  MET A 267      11.836   5.079  -0.611  1.00  7.34           S
ATOM   1385  CE  MET A 267      12.686   6.662  -0.482  1.00  8.84           C
ATOM   1386  N   ASP A 268      11.734   2.482   4.507  1.00  6.17           N
ATOM   1387  CA  ASP A 268      12.610   1.695   5.385  1.00  7.93           C
ATOM   1388  C   ASP A 268      14.036   1.684   4.838  1.00  7.64           C
ATOM   1389  O   ASP A 268      14.190   1.558   3.614  1.00  5.93           O
ATOM   1390  CB  ASP A 268      12.083   0.264   5.496  1.00  5.54           C
ATOM   1391  CG  ASP A 268      12.981  -0.619   6.339  1.00  7.42           C
ATOM   1392  OD1 ASP A 268      12.758  -0.686   7.564  1.00  9.31           O
ATOM   1393  OD2 ASP A 268      13.881  -1.266   5.750  1.00  7.67           O
ATOM   1394  N   ALA A 269      15.032   1.753   5.719  1.00  7.13           N
ATOM   1395  CA  ALA A 269      16.425   1.690   5.259  1.00  8.60           C
ATOM   1396  C   ALA A 269      17.255   0.747   6.135  1.00  7.36           C
ATOM   1397  O   ALA A 269      18.388   1.083   6.518  1.00  7.20           O
ATOM   1398  CB  ALA A 269      17.057   3.077   5.267  1.00 10.76           C
ATOM   1399  N   GLY A 270      16.717  -0.438   6.431  1.00  7.15           N
ATOM   1400  CA  GLY A 270      17.431  -1.438   7.225  1.00  6.15           C
ATOM   1401  C   GLY A 270      17.936  -0.885   8.555  1.00  8.83           C
ATOM   1402  O   GLY A 270      17.253  -0.126   9.235  1.00  7.05           O
ATOM   1403  N   HIS A 271      19.154  -1.275   8.945  1.00  8.31           N
ATOM   1404  CA  HIS A 271      19.752  -0.807  10.197  1.00  8.40           C
ATOM   1405  C   HIS A 271      21.274  -0.845  10.079  1.00  8.58           C
ATOM   1406  O   HIS A 271      21.839  -1.232   9.040  1.00 10.19           O
ATOM   1407  CB  HIS A 271      19.265  -1.626  11.398  1.00  5.83           C
ATOM   1408  CG  HIS A 271      19.612  -3.088  11.325  1.00  7.27           C
ATOM   1409  ND1 HIS A 271      20.778  -3.599  11.881  1.00  7.14           N
ATOM   1410  CD2 HIS A 271      18.970  -4.128  10.742  1.00  8.91           C
ATOM   1411  CE1 HIS A 271      20.810  -4.900  11.669  1.00  8.80           C
ATOM   1412  NE2 HIS A 271      19.745  -5.248  10.957  1.00  9.04           N
ATOM   1413  N   ALA A 272      21.972  -0.383  11.116  1.00  7.51           N
ATOM   1414  CA  ALA A 272      23.421  -0.288  11.084  1.00  8.94           C
ATOM   1415  C   ALA A 272      24.116  -1.596  10.753  1.00 10.29           C
ATOM   1416  O   ALA A 272      25.148  -1.579  10.067  1.00 11.43           O
ATOM   1417  CB  ALA A 272      23.957   0.267  12.411  1.00  8.86           C
ATOM   1418  N   GLY A 273      23.604  -2.730  11.211  1.00  9.19           N
ATOM   1419  CA  GLY A 273      24.165  -4.035  10.965  1.00  8.84           C
ATOM   1420  C   GLY A 273      23.765  -4.618   9.629  1.00  8.39           C
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ATOM   1421  O   GLY A 273      24.143  -5.758   9.351  1.00 12.18           O
ATOM   1422  N   TRP A 274      23.008  -3.903   8.803  1.00  8.78           N
ATOM   1423  CA  TRP A 274      22.622  -4.344   7.476  1.00 11.33           C
ATOM   1424  C   TRP A 274      23.290  -3.410   6.459  1.00 11.41           C
ATOM   1425  O   TRP A 274      24.263  -3.765   5.787  1.00 12.00           O
ATOM   1426  CB  TRP A 274      21.105  -4.321   7.248  1.00 12.55           C
ATOM   1427  CG  TRP A 274      20.574  -4.994   6.020  1.00 12.97           C
ATOM   1428  CD1 TRP A 274      21.282  -5.388   4.906  1.00 13.66           C
ATOM   1429  CD2 TRP A 274      19.209  -5.365   5.757  1.00 11.08           C
ATOM   1430  NE1 TRP A 274      20.456  -5.975   3.999  1.00 10.98           N
ATOM   1431  CE2 TRP A 274      19.169  -5.962   4.488  1.00 11.39           C
ATOM   1432  CE3 TRP A 274      18.013  -5.213   6.473  1.00 11.56           C
ATOM   1433  CZ2 TRP A 274      17.983  -6.443   3.923  1.00 12.85           C
ATOM   1434  CZ3 TRP A 274      16.831  -5.679   5.906  1.00 11.52           C
ATOM   1435  CH2 TRP A 274      16.813  -6.293   4.643  1.00 12.41           C
ATOM   1436  N   LEU A 275      22.777  -2.187   6.356  1.00 10.15           N
ATOM   1437  CA  LEU A 275      23.304  -1.220   5.404  1.00  9.63           C
ATOM   1438  C   LEU A 275      24.376  -0.308   5.960  1.00  7.62           C
ATOM   1439  O   LEU A 275      24.967   0.453   5.187  1.00 11.04           O
ATOM   1440  CB  LEU A 275      22.155  -0.353   4.845  1.00  9.26           C
ATOM   1441  CG  LEU A 275      20.957  -1.094   4.247  1.00 11.24           C
ATOM   1442  CD1 LEU A 275      19.944  -0.099   3.689  1.00  8.62           C
ATOM   1443  CD2 LEU A 275      21.391  -2.079   3.162  1.00 13.03           C
ATOM   1444  N   GLY A 276      24.670  -0.361   7.248  1.00  9.05           N
ATOM   1445  CA  GLY A 276      25.651   0.545   7.870  1.00  8.53           C
ATOM   1446  C   GLY A 276      27.096   0.102   7.676  1.00  9.78           C
ATOM   1447  O   GLY A 276      28.020   0.909   7.878  1.00 10.26           O
ATOM   1448  N   TRP A 277      27.311  -1.153   7.287  1.00 10.13           N
ATOM   1449  CA  TRP A 277      28.700  -1.589   7.017  1.00 11.51           C
ATOM   1450  C   TRP A 277      29.252  -0.645   5.956  1.00 12.13           C
ATOM   1451  O   TRP A 277      28.585  -0.383   4.946  1.00 12.84           O
ATOM   1452  CB  TRP A 277      28.705  -3.020   6.482  1.00 10.92           C
ATOM   1453  CG  TRP A 277      28.246  -4.049   7.479  1.00 12.31           C
ATOM   1454  CD1 TRP A 277      26.962  -4.446   7.745  1.00 11.68           C
ATOM   1455  CD2 TRP A 277      29.093  -4.760   8.388  1.00 12.51           C
ATOM   1456  NE1 TRP A 277      26.973  -5.383   8.762  1.00 11.14           N
ATOM   1457  CE2 TRP A 277      28.263  -5.600   9.163  1.00 11.67           C
ATOM   1458  CE3 TRP A 277      30.477  -4.765   8.611  1.00 11.80           C
ATOM   1459  CZ2 TRP A 277      28.780  -6.428  10.157  1.00 12.92           C
ATOM   1460  CZ3 TRP A 277      30.991  -5.622   9.581  1.00 14.44           C
ATOM   1461  CH2 TRP A 277      30.134  -6.445  10.340  1.00 15.36           C
ATOM   1462  N   PRO A 278      30.510  -0.238   6.068  1.00 12.38           N
ATOM   1463  CA  PRO A 278      31.102   0.724   5.160  1.00 12.46           C
ATOM   1464  C   PRO A 278      30.950   0.422   3.688  1.00 13.57           C
ATOM   1465  O   PRO A 278      30.584   1.328   2.922  1.00 14.10           O
ATOM   1466  CB  PRO A 278      32.561   0.774   5.610  1.00 11.83           C
ATOM   1467  CG  PRO A 278      32.432   0.638   7.102  1.00 12.89           C
ATOM   1468  CD  PRO A 278      31.331  -0.386   7.304  1.00 13.10           C
ATOM   1469  N   ALA A 279      31.030  -0.844   3.277  1.00 12.89           N
ATOM   1470  CA  ALA A 279      30.878  -1.223   1.884  1.00 13.58           C
ATOM   1471  C   ALA A 279      29.441  -1.111   1.381  1.00 13.99           C
ATOM   1472  O   ALA A 279      29.250  -1.084   0.165  1.00 12.43           O
ATOM   1473  CB  ALA A 279      31.365  -2.663   1.692  1.00 13.49           C
ATOM   1474  N   ASN A 280      28.449  -1.061   2.280  1.00 11.55           N
ATOM   1475  CA  ASN A 280      27.058  -0.991   1.842  1.00 11.36           C
ATOM   1476  C   ASN A 280      26.497   0.425   1.836  1.00 12.48           C
ATOM   1477  O   ASN A 280      25.510   0.659   1.122  1.00 10.23           O
ATOM   1478  CB  ASN A 280      26.155  -1.851   2.742  1.00 10.12           C
ATOM   1479  CG  ASN A 280      26.557  -3.316   2.710  1.00 15.79           C
ATOM   1480  OD1 ASN A 280      27.172  -3.773   1.742  1.00 12.50           O
ATOM   1481  ND2 ASN A 280      26.213  -4.055   3.761  1.00 12.07           N
ATOM   1482  N   ILE A 281      27.174   1.370   2.459  1.00 14.04           N
ATOM   1483  CA  ILE A 281      26.693   2.735   2.572  1.00 16.09           C
ATOM   1484  C   ILE A 281      26.393   3.442   1.264  1.00 14.58           C
ATOM   1485  O   ILE A 281      25.332   4.030   1.060  1.00 12.07           O
ATOM   1486  CB  ILE A 281      27.661   3.651   3.367  1.00 21.92           C
ATOM   1487  CG1 ILE A 281      27.963   3.086   4.745  1.00 23.78           C
ATOM   1488  CG2 ILE A 281      27.013   5.041   3.496  1.00 22.45           C
ATOM   1489  CD1 ILE A 281      27.021   3.472   5.859  1.00 23.17           C
ATOM   1490  N   GLN A 282      27.345   3.471   0.345  1.00 15.72           N
ATOM   1491  CA  GLN A 282      27.147   4.169  -0.922  1.00 13.98           C
ATOM   1492  C   GLN A 282      26.202   3.541  -1.919  1.00 11.05           C
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ATOM	1493	O	GLN	A	282	25.394	4.239	-2.534	1.00	12.05	O
ATOM	1494	CB	GLN	A	282	28.550	4.314	-1.539	1.00	19.90	C
ATOM	1495	CG	GLN	A	282	28.436	4.984	-2.913	1.00	28.16	C
ATOM	1496	CD	GLN	A	282	29.824	5.146	-3.498	1.00	37.02	C
ATOM	1497	OE1	GLN	A	282	30.768	5.539	-2.800	1.00	37.94	O
ATOM	1498	NE2	GLN	A	282	29.968	4.834	-4.783	1.00	37.58	N
ATOM	1499	N	PRO	A	283	26.259	2.224	-2.056	1.00	10.83	N
ATOM	1500	CA	PRO	A	283	25.269	1.531	-2.877	1.00	12.76	C
ATOM	1501	C	PRO	A	283	23.874	1.810	-2.333	1.00	11.45	C
ATOM	1502	O	PRO	A	283	22.927	1.999	-3.106	1.00	8.19	O
ATOM	1503	CB	PRO	A	283	25.608	0.051	-2.775	1.00	14.50	C
ATOM	1504	CG	PRO	A	283	26.904	-0.036	-2.068	1.00	13.85	C
ATOM	1505	CD	PRO	A	283	27.298	1.316	-1.551	1.00	11.96	C
ATOM	1506	N	ALA	A	284	23.702	1.803	-1.007	1.00	10.70	N
ATOM	1507	CA	ALA	A	284	22.397	2.118	-0.416	1.00	11.63	C
ATOM	1508	C	ALA	A	284	21.986	3.550	-0.728	1.00	10.83	C
ATOM	1509	O	ALA	A	284	20.843	3.894	-1.028	1.00	8.26	O
ATOM	1510	CB	ALA	A	284	22.489	1.945	1.107	1.00	7.27	C
ATOM	1511	N	ALA	A	285	22.968	4.461	-0.610	1.00	11.82	N
ATOM	1512	CA	ALA	A	285	22.704	5.880	-0.882	1.00	11.59	C
ATOM	1513	C	ALA	A	285	22.330	6.073	-2.341	1.00	11.08	C
ATOM	1514	O	ALA	A	285	21.407	6.822	-2.662	1.00	7.85	O
ATOM	1515	CB	ALA	A	285	23.912	6.727	-0.496	1.00	9.98	C
ATOM	1516	N	GLU	A	286	23.026	5.375	-3.240	1.00	11.14	N
ATOM	1517	CA	GLU	A	286	22.665	5.446	-4.662	1.00	12.08	C
ATOM	1518	C	GLU	A	286	21.250	4.935	-4.903	1.00	13.20	C
ATOM	1519	O	GLU	A	286	20.436	5.589	-5.573	1.00	10.15	O
ATOM	1520	CB	GLU	A	286	23.676	4.661	-5.491	1.00	16.73	C
ATOM	1521	CG	GLU	A	286	25.013	5.366	-5.630	1.00	24.97	C
ATOM	1522	CD	GLU	A	286	26.147	4.424	-5.977	1.00	30.68	C
ATOM	1523	OE1	GLU	A	286	26.008	3.197	-5.761	1.00	35.88	O
ATOM	1524	OE2	GLU	A	286	27.184	4.909	-6.458	1.00	29.85	O
ATOM	1525	N	LEU	A	287	20.923	3.784	-4.325	1.00	11.82	N
ATOM	1526	CA	LEU	A	287	19.576	3.241	-4.501	1.00	11.32	C
ATOM	1527	C	LEU	A	287	18.470	4.140	-3.981	1.00	10.45	C
ATOM	1528	O	LEU	A	287	17.530	4.425	-4.745	1.00	10.62	O
ATOM	1529	CB	LEU	A	287	19.493	1.861	-3.836	1.00	14.87	C
ATOM	1530	CG	LEU	A	287	18.094	1.222	-3.820	1.00	17.45	C
ATOM	1531	CD1	LEU	A	287	17.700	0.818	-5.235	1.00	22.29	C
ATOM	1532	CD2	LEU	A	287	18.098	0.011	-2.897	1.00	18.87	C
ATOM	1533	N	PHE	A	288	18.537	4.602	-2.730	1.00	7.31	N
ATOM	1534	CA	PHE	A	288	17.460	5.404	-2.172	1.00	7.68	C
ATOM	1535	C	PHE	A	288	17.338	6.775	-2.818	1.00	9.78	C
ATOM	1536	O	PHE	A	288	16.219	7.265	-3.024	1.00	7.80	O
ATOM	1537	CB	PHE	A	288	17.533	5.508	-0.641	1.00	6.27	C
ATOM	1538	CG	PHE	A	288	17.152	4.214	0.034	1.00	8.96	C
ATOM	1539	CD1	PHE	A	288	15.825	3.831	0.127	1.00	9.32	C
ATOM	1540	CD2	PHE	A	288	18.136	3.384	0.551	1.00	8.51	C
ATOM	1541	CE1	PHE	A	288	15.464	2.628	0.706	1.00	10.48	C
ATOM	1542	CE2	PHE	A	288	17.782	2.176	1.146	1.00	10.59	C
ATOM	1543	CZ	PHE	A	288	16.445	1.800	1.229	1.00	9.25	C
ATOM	1544	N	ALA	A	289	18.475	7.408	-3.144	1.00	10.79	N
ATOM	1545	CA	ALA	A	289	18.396	8.721	-3.771	1.00	11.58	C
ATOM	1546	C	ALA	A	289	17.815	8.612	-5.180	1.00	11.29	C
ATOM	1547	O	ALA	A	289	17.094	9.523	-5.595	1.00	10.16	O
ATOM	1548	CB	ALA	A	289	19.740	9.434	-3.836	1.00	9.82	C
ATOM	1549	N	LYS	A	290	18.100	7.518	-5.886	1.00	10.82	N
ATOM	1550	CA	LYS	A	290	17.570	7.400	-7.248	1.00	14.48	C
ATOM	1551	C	LYS	A	290	16.070	7.118	-7.243	1.00	12.08	C
ATOM	1552	O	LYS	A	290	15.310	7.642	-8.055	1.00	10.89	O
ATOM	1553	CB	LYS	A	290	18.353	6.355	-8.041	1.00	15.13	C
ATOM	1554	CG	LYS	A	290	17.902	6.210	-9.483	1.00	22.86	C
ATOM	1555	CD	LYS	A	290	17.873	7.530	-10.229	1.00	28.98	C
ATOM	1556	CE	LYS	A	290	19.178	7.771	-10.978	1.00	35.23	C
ATOM	1557	NZ	LYS	A	290	19.255	6.883	-12.180	1.00	38.20	N
ATOM	1558	N	ILE	A	291	15.603	6.316	-6.299	1.00	11.63	N
ATOM	1559	CA	ILE	A	291	14.168	6.055	-6.145	1.00	10.44	C
ATOM	1560	C	ILE	A	291	13.491	7.404	-5.897	1.00	10.20	C
ATOM	1561	O	ILE	A	291	12.464	7.731	-6.479	1.00	11.65	O
ATOM	1562	CB	ILE	A	291	13.914	5.148	-4.917	1.00	13.66	C
ATOM	1563	CG1	ILE	A	291	14.364	3.716	-5.209	1.00	16.69	C
ATOM	1564	CG2	ILE	A	291	12.462	5.192	-4.433	1.00	13.26	C

ATOM	1565	CD1	ILE	A	291	13.457	2.919	-6.109	1.00	19.35	C
ATOM	1566	N	TYR	A	292	14.019	8.162	-4.933	1.00	8.98	N
ATOM	1567	CA	TYR	A	292	13.464	9.478	-4.595	1.00	9.51	C
ATOM	1568	C	TYR	A	292	13.333	10.357	-5.838	1.00	6.92	C
ATOM	1569	O	TYR	A	292	12.310	11.002	-6.091	1.00	9.77	O
ATOM	1570	CB	TYR	A	292	14.367	10.154	-3.562	1.00	8.38	C
ATOM	1571	CG	TYR	A	292	13.950	11.518	-3.064	1.00	10.61	C
ATOM	1572	CD1	TYR	A	292	12.766	11.693	-2.364	1.00	12.16	C
ATOM	1573	CD2	TYR	A	292	14.750	12.633	-3.283	1.00	10.96	C
ATOM	1574	CE1	TYR	A	292	12.378	12.940	-1.896	1.00	12.18	C
ATOM	1575	CE2	TYR	A	292	14.378	13.887	-2.821	1.00	11.86	C
ATOM	1576	CZ	TYR	A	292	13.198	14.032	-2.132	1.00	13.20	C
ATOM	1577	OH	TYR	A	292	12.811	15.270	-1.664	1.00	14.21	O
ATOM	1578	N	GLU	A	293	14.403	10.437	-6.624	1.00	9.98	N
ATOM	1579	CA	GLU	A	293	14.409	11.220	-7.846	1.00	11.16	C
ATOM	1580	C	GLU	A	293	13.405	10.676	-8.852	1.00	12.04	C
ATOM	1581	O	GLU	A	293	12.650	11.440	-9.456	1.00	11.19	O
ATOM	1582	CB	GLU	A	293	15.788	11.173	-8.526	1.00	14.97	C
ATOM	1583	CG	GLU	A	293	16.736	12.189	-7.935	1.00	30.37	C
ATOM	1584	CD	GLU	A	293	18.049	12.319	-8.680	1.00	36.86	C
ATOM	1585	OE1	GLU	A	293	18.304	11.559	-9.640	1.00	37.27	O
ATOM	1586	OE2	GLU	A	293	18.814	13.216	-8.257	1.00	42.21	O
ATOM	1587	N	ASP	A	294	13.438	9.358	-9.058	1.00	9.56	N
ATOM	1588	CA	ASP	A	294	12.526	8.733	-10.008	1.00	11.87	C
ATOM	1589	C	ASP	A	294	11.066	8.888	-9.617	1.00	13.02	C
ATOM	1590	O	ASP	A	294	10.217	8.854	-10.513	1.00	12.14	O
ATOM	1591	CB	ASP	A	294	12.871	7.246	-10.191	1.00	12.24	C
ATOM	1592	CG	ASP	A	294	14.145	7.070	-11.000	1.00	17.67	C
ATOM	1593	OD1	ASP	A	294	14.688	8.063	-11.519	1.00	16.93	O
ATOM	1594	OD2	ASP	A	294	14.642	5.938	-11.142	1.00	15.94	O
ATOM	1595	N	ALA	A	295	10.717	9.051	-8.345	1.00	10.18	N
ATOM	1596	CA	ALA	A	295	9.347	9.285	-7.937	1.00	8.76	C
ATOM	1597	C	ALA	A	295	8.963	10.770	-8.046	1.00	10.32	C
ATOM	1598	O	ALA	A	295	7.851	11.106	-7.668	1.00	9.41	O
ATOM	1599	CB	ALA	A	295	9.076	8.870	-6.486	1.00	8.68	C
ATOM	1600	N	GLY	A	296	9.836	11.646	-8.520	1.00	11.57	N
ATOM	1601	CA	GLY	A	296	9.560	13.062	-8.635	1.00	14.12	C
ATOM	1602	C	GLY	A	296	9.834	13.856	-7.366	1.00	12.59	C
ATOM	1603	O	GLY	A	296	9.264	14.933	-7.181	1.00	11.99	O
ATOM	1604	N	LYS	A	297	10.600	13.324	-6.420	1.00	10.82	N
ATOM	1605	CA	LYS	A	297	10.841	13.965	-5.127	1.00	11.02	C
ATOM	1606	C	LYS	A	297	9.526	14.469	-4.539	1.00	12.69	C
ATOM	1607	O	LYS	A	297	9.265	15.657	-4.383	1.00	12.46	O
ATOM	1608	CB	LYS	A	297	11.841	15.117	-5.341	1.00	14.05	C
ATOM	1609	CG	LYS	A	297	13.137	14.611	-5.968	1.00	13.27	C
ATOM	1610	CD	LYS	A	297	14.250	15.649	-5.839	1.00	17.64	C
ATOM	1611	CE	LYS	A	297	15.526	15.116	-6.478	1.00	19.52	C
ATOM	1612	NZ	LYS	A	297	16.686	15.962	-6.079	1.00	24.20	N
ATOM	1613	N	PRO	A	298	8.610	13.543	-4.246	1.00	10.53	N
ATOM	1614	CA	PRO	A	298	7.309	13.872	-3.716	1.00	8.33	C
ATOM	1615	C	PRO	A	298	7.437	14.688	-2.437	1.00	8.91	C
ATOM	1616	O	PRO	A	298	8.278	14.375	-1.593	1.00	7.49	O
ATOM	1617	CB	PRO	A	298	6.638	12.524	-3.473	1.00	9.86	C
ATOM	1618	CG	PRO	A	298	7.441	11.519	-4.231	1.00	8.01	C
ATOM	1619	CD	PRO	A	298	8.839	12.070	-4.376	1.00	8.83	C
ATOM	1620	N	ARG	A	299	6.596	15.702	-2.263	1.00	8.72	N
ATOM	1621	CA	ARG	A	299	6.714	16.557	-1.064	1.00	9.08	C
ATOM	1622	C	ARG	A	299	6.626	15.776	0.235	1.00	8.93	C
ATOM	1623	O	ARG	A	299	7.398	15.987	1.168	1.00	7.66	O
ATOM	1624	CB	ARG	A	299	5.608	17.621	-1.085	1.00	8.46	C
ATOM	1625	CG	ARG	A	299	5.631	18.563	0.113	1.00	10.62	C
ATOM	1626	CD	ARG	A	299	4.202	18.995	0.464	1.00	13.20	C
ATOM	1627	NE	ARG	A	299	3.458	17.838	0.979	1.00	10.71	N
ATOM	1628	CZ	ARG	A	299	3.692	17.217	2.136	1.00	11.86	C
ATOM	1629	NH1	ARG	A	299	4.634	17.638	2.980	1.00	8.47	N
ATOM	1630	NH2	ARG	A	299	2.939	16.156	2.399	1.00	9.13	N
ATOM	1631	N	ALA	A	300	5.736	14.781	0.285	1.00	7.86	N
ATOM	1632	CA	ALA	A	300	5.493	13.978	1.469	1.00	7.80	C
ATOM	1633	C	ALA	A	300	6.624	13.039	1.855	1.00	8.97	C
ATOM	1634	O	ALA	A	300	6.635	12.577	3.019	1.00	9.64	O
ATOM	1635	CB	ALA	A	300	4.221	13.133	1.229	1.00	6.82	C
ATOM	1636	N	VAL	A	301	7.549	12.776	0.934	1.00	5.06	N

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ATOM   1637  CA  VAL A 301       8.688  11.902   1.247  1.00  9.62           C
ATOM   1638  C   VAL A 301       9.691  12.699   2.086  1.00 11.03           C
ATOM   1639  O   VAL A 301      10.416  13.568   1.583  1.00 11.13           O
ATOM   1640  CB  VAL A 301       9.361  11.291   0.018  1.00  9.77           C
ATOM   1641  CG1 VAL A 301      10.522  10.378   0.420  1.00 11.10           C
ATOM   1642  CG2 VAL A 301       8.333  10.444  -0.751  1.00  8.91           C
ATOM   1643  N   ARG A 302       9.680  12.393   3.376  1.00  8.40           N
ATOM   1644  CA  ARG A 302      10.495  13.108   4.350  1.00 10.39           C
ATOM   1645  C   ARG A 302      11.868  12.486   4.530  1.00  9.44           C
ATOM   1646  O   ARG A 302      12.856  13.182   4.763  1.00  6.90           O
ATOM   1647  CB  ARG A 302       9.706  13.168   5.659  1.00 12.00           C
ATOM   1648  CG  ARG A 302      10.384  13.914   6.786  1.00 13.82           C
ATOM   1649  CD  ARG A 302      10.666  15.391   6.484  1.00 13.53           C
ATOM   1650  NE  ARG A 302      11.305  16.005   7.659  1.00 11.16           N
ATOM   1651  CZ  ARG A 302      11.618  17.286   7.764  1.00 14.08           C
ATOM   1652  NH1 ARG A 302      11.400  18.142   6.771  1.00 12.81           N
ATOM   1653  NH2 ARG A 302      12.171  17.743   8.888  1.00 11.84           N
ATOM   1654  N   GLY A 303      11.992  11.171   4.283  1.00  8.63           N
ATOM   1655  CA  GLY A 303      13.325  10.562   4.407  1.00  8.56           C
ATOM   1656  C   GLY A 303      13.220   9.072   4.674  1.00  6.34           C
ATOM   1657  O   GLY A 303      12.510   8.373   3.944  1.00  5.44           O
ATOM   1658  N   LEU A 304      13.973   8.573   5.641  1.00  8.57           N
ATOM   1659  CA  LEU A 304      14.121   7.127   5.836  1.00  5.76           C
ATOM   1660  C   LEU A 304      13.901   6.720   7.283  1.00  6.88           C
ATOM   1661  O   LEU A 304      14.114   7.560   8.154  1.00  6.28           O
ATOM   1662  CB  LEU A 304      15.557   6.752   5.431  1.00  9.81           C
ATOM   1663  CG  LEU A 304      15.996   7.063   3.989  1.00  7.82           C
ATOM   1664  CD1 LEU A 304      17.465   6.694   3.808  1.00 11.27           C
ATOM   1665  CD2 LEU A 304      15.109   6.295   3.008  1.00  6.00           C
ATOM   1666  N   ALA A 305      13.551   5.451   7.512  1.00  6.26           N
ATOM   1667  CA  ALA A 305      13.395   4.934   8.864  1.00  7.52           C
ATOM   1668  C   ALA A 305      14.415   3.815   9.084  1.00  8.92           C
ATOM   1669  O   ALA A 305      14.677   3.045   8.155  1.00  8.95           O
ATOM   1670  CB  ALA A 305      12.015   4.342   9.091  1.00  5.11           C
ATOM   1671  N   THR A 306      15.050   3.768  10.252  1.00  7.71           N
ATOM   1672  CA  THR A 306      16.025   2.728  10.517  1.00  6.41           C
ATOM   1673  C   THR A 306      15.738   1.990  11.826  1.00  6.71           C
ATOM   1674  O   THR A 306      15.011   2.441  12.714  1.00  5.64           O
ATOM   1675  CB  THR A 306      17.491   3.219  10.550  1.00  8.52           C
ATOM   1676  OG1 THR A 306      17.728   3.932  11.767  1.00  8.64           O
ATOM   1677  CG2 THR A 306      17.824   4.120   9.367  1.00  7.21           C
ATOM   1678  N   ASN A 307      16.347   0.807  11.914  1.00  6.96           N
ATOM   1679  CA  ASN A 307      16.252  -0.111  13.042  1.00  7.89           C
ATOM   1680  C   ASN A 307      14.853  -0.649  13.282  1.00  9.11           C
ATOM   1681  O   ASN A 307      14.592  -1.152  14.374  1.00  7.66           O
ATOM   1682  CB  ASN A 307      16.773   0.571  14.342  1.00  7.51           C
ATOM   1683  CG  ASN A 307      17.210  -0.456  15.379  1.00 11.22           C
ATOM   1684  OD1 ASN A 307      17.893  -1.433  15.062  1.00  8.51           O
ATOM   1685  ND2 ASN A 307      16.797  -0.293  16.640  1.00 12.34           N
ATOM   1686  N   VAL A 308      13.944  -0.583  12.302  1.00  8.35           N
ATOM   1687  CA  VAL A 308      12.579  -1.061  12.459  1.00  8.75           C
ATOM   1688  C   VAL A 308      12.584  -2.533  12.855  1.00  8.64           C
ATOM   1689  O   VAL A 308      13.242  -3.359  12.216  1.00  8.42           O
ATOM   1690  CB  VAL A 308      11.740  -0.895  11.170  1.00  6.29           C
ATOM   1691  CG1 VAL A 308      10.350  -1.495  11.336  1.00  7.20           C
ATOM   1692  CG2 VAL A 308      11.605   0.588  10.831  1.00  5.27           C
ATOM   1693  N   ALA A 309      11.961  -2.861  13.976  1.00  8.32           N
ATOM   1694  CA  ALA A 309      11.870  -4.210  14.496  1.00  9.02           C
ATOM   1695  C   ALA A 309      13.226  -4.796  14.872  1.00 10.25           C
ATOM   1696  O   ALA A 309      13.294  -5.994  15.155  1.00 12.32           O
ATOM   1697  CB  ALA A 309      11.168  -5.146  13.504  1.00  9.76           C
ATOM   1698  N   ASN A 310      14.249  -3.970  15.008  1.00  9.63           N
ATOM   1699  CA  ASN A 310      15.553  -4.462  15.435  1.00 10.80           C
ATOM   1700  C   ASN A 310      15.855  -3.886  16.803  1.00 10.72           C
ATOM   1701  O   ASN A 310      15.000  -3.215  17.384  1.00 11.68           O
ATOM   1702  CB  ASN A 310      16.612  -4.161  14.362  1.00 11.11           C
ATOM   1703  CG  ASN A 310      16.726  -5.384  13.459  1.00 16.07           C
ATOM   1704  OD1 ASN A 310      17.473  -6.305  13.786  1.00 13.72           O
ATOM   1705  ND2 ASN A 310      15.920  -5.457  12.399  1.00 16.01           N
ATOM   1706  N   TYR A 311      17.046  -4.168  17.342  1.00 10.84           N
ATOM   1707  CA  TYR A 311      17.364  -3.801  18.713  1.00 11.23           C
ATOM   1708  C   TYR A 311      18.564  -2.896  18.884  1.00 12.18           C
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ATOM   1709  O   TYR A 311      19.034  -2.763  20.028  1.00 12.23           O
ATOM   1710  CB  TYR A 311      17.672  -5.122  19.491  1.00 11.01           C
ATOM   1711  CG  TYR A 311      16.663  -6.219  19.229  1.00 11.75           C
ATOM   1712  CD1 TYR A 311      15.492  -6.315  19.983  1.00 11.64           C
ATOM   1713  CD2 TYR A 311      16.876  -7.136  18.194  1.00 11.12           C
ATOM   1714  CE1 TYR A 311      14.574  -7.318  19.724  1.00 11.23           C
ATOM   1715  CE2 TYR A 311      15.943  -8.136  17.939  1.00 11.43           C
ATOM   1716  CZ  TYR A 311      14.813  -8.219  18.711  1.00 11.12           C
ATOM   1717  OH  TYR A 311      13.890  -9.224  18.468  1.00 12.16           O
ATOM   1718  N   ASN A 312      19.092  -2.337  17.791  1.00 12.04           N
ATOM   1719  CA  ASN A 312      20.292  -1.527  17.882  1.00 13.38           C
ATOM   1720  C   ASN A 312      20.155  -0.300  18.764  1.00 12.71           C
ATOM   1721  O   ASN A 312      19.105   0.324  18.940  1.00 10.84           O
ATOM   1722  CB  ASN A 312      20.755  -1.051  16.493  1.00 11.78           C
ATOM   1723  CG  ASN A 312      21.006  -2.203  15.545  1.00 12.16           C
ATOM   1724  OD1 ASN A 312      20.933  -3.367  15.926  1.00 12.39           O
ATOM   1725  ND2 ASN A 312      21.275  -1.906  14.280  1.00 11.61           N
ATOM   1726  N   ALA A 313      21.308   0.102  19.310  1.00 11.20           N
ATOM   1727  CA  ALA A 313      21.350   1.317  20.119  1.00 11.45           C
ATOM   1728  C   ALA A 313      21.286   2.516  19.167  1.00 12.29           C
ATOM   1729  O   ALA A 313      21.675   2.380  18.003  1.00 10.46           O
ATOM   1730  CB  ALA A 313      22.702   1.392  20.835  1.00 10.42           C
ATOM   1731  N   TRP A 314      20.850   3.644  19.684  1.00 11.45           N
ATOM   1732  CA  TRP A 314      20.937   4.902  18.966  1.00 14.41           C
ATOM   1733  C   TRP A 314      22.418   5.307  19.086  1.00 14.21           C
ATOM   1734  O   TRP A 314      23.128   5.516  18.113  1.00 10.80           O
ATOM   1735  CB  TRP A 314      20.037   5.990  19.573  1.00 14.64           C
ATOM   1736  CG  TRP A 314      20.510   7.386  19.280  1.00 13.52           C
ATOM   1737  CD1 TRP A 314      20.929   8.314  20.203  1.00 15.05           C
ATOM   1738  CD2 TRP A 314      20.688   7.989  18.004  1.00 12.63           C
ATOM   1739  NE1 TRP A 314      21.329   9.462  19.568  1.00 13.76           N
ATOM   1740  CE2 TRP A 314      21.210   9.280  18.216  1.00 14.52           C
ATOM   1741  CE3 TRP A 314      20.456   7.572  16.688  1.00  9.95           C
ATOM   1742  CZ2 TRP A 314      21.474  10.168  17.169  1.00 12.11           C
ATOM   1743  CZ3 TRP A 314      20.733   8.442  15.650  1.00  8.98           C
ATOM   1744  CH2 TRP A 314      21.237   9.737  15.898  1.00 11.19           C
ATOM   1745  N   SER A 315      22.912   5.318  20.334  1.00 15.23           N
ATOM   1746  CA  SER A 315      24.287   5.751  20.548  1.00 18.72           C
ATOM   1747  C   SER A 315      24.833   5.213  21.867  1.00 21.49           C
ATOM   1748  O   SER A 315      24.350   5.586  22.934  1.00 21.81           O
ATOM   1749  CB  SER A 315      24.377   7.278  20.558  1.00 21.30           C
ATOM   1750  OG  SER A 315      25.704   7.736  20.802  1.00 21.21           O
ATOM   1751  N   VAL A 316      25.825   4.351  21.762  1.00 21.34           N
ATOM   1752  CA  VAL A 316      26.497   3.791  22.932  1.00 22.22           C
ATOM   1753  C   VAL A 316      28.002   3.983  22.739  1.00 23.86           C
ATOM   1754  O   VAL A 316      28.511   3.976  21.622  1.00 19.29           O
ATOM   1755  CB  VAL A 316      26.173   2.323  23.197  1.00 21.02           C
ATOM   1756  CG1 VAL A 316      24.794   2.201  23.842  1.00 24.42           C
ATOM   1757  CG2 VAL A 316      26.265   1.504  21.923  1.00 22.66           C
ATOM   1758  N   SER A 317      28.698   4.173  23.854  1.00 25.44           N
ATOM   1759  CA  SER A 317      30.119   4.470  23.854  1.00 28.10           C
ATOM   1760  C   SER A 317      30.995   3.307  23.433  1.00 28.90           C
ATOM   1761  O   SER A 317      32.074   3.513  22.866  1.00 31.11           O
ATOM   1762  CB  SER A 317      30.491   4.924  25.284  1.00 29.64           C
ATOM   1763  OG  SER A 317      30.252   3.803  26.135  1.00 31.24           O
ATOM   1764  N   SER A 318      30.568   2.083  23.699  1.00 26.74           N
ATOM   1765  CA  SER A 318      31.332   0.908  23.319  1.00 28.86           C
ATOM   1766  C   SER A 318      30.525  -0.007  22.400  1.00 26.66           C
ATOM   1767  O   SER A 318      29.340  -0.241  22.642  1.00 25.50           O
ATOM   1768  CB  SER A 318      31.740   0.147  24.590  1.00 32.29           C
ATOM   1769  OG  SER A 318      32.564  -0.953  24.249  1.00 37.63           O
ATOM   1770  N   PRO A 319      31.159  -0.537  21.363  1.00 23.88           N
ATOM   1771  CA  PRO A 319      30.511  -1.437  20.435  1.00 22.82           C
ATOM   1772  C   PRO A 319      30.168  -2.788  21.027  1.00 22.89           C
ATOM   1773  O   PRO A 319      31.012  -3.521  21.559  1.00 21.86           O
ATOM   1774  CB  PRO A 319      31.514  -1.623  19.300  1.00 24.00           C
ATOM   1775  CG  PRO A 319      32.806  -1.049  19.750  1.00 23.83           C
ATOM   1776  CD  PRO A 319      32.578  -0.276  21.014  1.00 24.62           C
ATOM   1777  N   PRO A 320      28.901  -3.176  20.921  1.00 21.38           N
ATOM   1778  CA  PRO A 320      28.458  -4.495  21.378  1.00 20.94           C
ATOM   1779  C   PRO A 320      29.264  -5.524  20.607  1.00 21.78           C
ATOM   1780  O   PRO A 320      29.468  -5.395  19.391  1.00 20.52           O
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ATOM   1781  CB  PRO A 320      26.978  -4.539  21.056  1.00 17.82           C
ATOM   1782  CG  PRO A 320      26.572  -3.113  20.877  1.00 19.44           C
ATOM   1783  CD  PRO A 320      27.787  -2.408  20.312  1.00 21.26           C
ATOM   1784  N   PRO A 321      29.711  -6.577  21.275  1.00 23.19           N
ATOM   1785  CA  PRO A 321      30.559  -7.598  20.681  1.00 21.99           C
ATOM   1786  C   PRO A 321      30.047  -8.219  19.403  1.00 20.97           C
ATOM   1787  O   PRO A 321      30.853  -8.472  18.487  1.00 18.77           O
ATOM   1788  CB  PRO A 321      30.724  -8.655  21.775  1.00 22.93           C
ATOM   1789  CG  PRO A 321      30.445  -7.933  23.041  1.00 22.72           C
ATOM   1790  CD  PRO A 321      29.486  -6.814  22.724  1.00 23.19           C
ATOM   1791  N   TYR A 322      28.731  -8.433  19.264  1.00 15.16           N
ATOM   1792  CA  TYR A 322      28.164  -9.002  18.067  1.00 13.57           C
ATOM   1793  C   TYR A 322      28.139  -8.028  16.888  1.00 11.96           C
ATOM   1794  O   TYR A 322      27.859  -8.461  15.766  1.00 11.72           O
ATOM   1795  CB  TYR A 322      26.730  -9.557  18.294  1.00 13.57           C
ATOM   1796  CG  TYR A 322      25.911  -8.526  19.051  1.00 14.10           C
ATOM   1797  CD1 TYR A 322      25.350  -7.434  18.383  1.00 15.48           C
ATOM   1798  CD2 TYR A 322      25.744  -8.631  20.424  1.00 14.15           C
ATOM   1799  CE1 TYR A 322      24.637  -6.478  19.070  1.00 13.81           C
ATOM   1800  CE2 TYR A 322      25.027  -7.680  21.123  1.00 14.00           C
ATOM   1801  CZ  TYR A 322      24.476  -6.614  20.442  1.00 13.74           C
ATOM   1802  OH  TYR A 322      23.794  -5.667  21.153  1.00 12.10           O
ATOM   1803  N   THR A 323      28.466  -6.765  17.062  1.00 12.54           N
ATOM   1804  CA  THR A 323      28.556  -5.824  15.954  1.00 14.40           C
ATOM   1805  C   THR A 323      29.950  -5.832  15.330  1.00 17.79           C
ATOM   1806  O   THR A 323      30.135  -5.317  14.222  1.00 16.25           O
ATOM   1807  CB  THR A 323      28.228  -4.392  16.386  1.00 13.73           C
ATOM   1808  OG1 THR A 323      29.199  -3.931  17.349  1.00 15.88           O
ATOM   1809  CG2 THR A 323      26.847  -4.266  17.013  1.00 11.85           C
ATOM   1810  N   SER A 324      30.951  -6.350  16.044  1.00 17.37           N
ATOM   1811  CA  SER A 324      32.316  -6.328  15.495  1.00 18.42           C
ATOM   1812  C   SER A 324      32.433  -7.144  14.230  1.00 17.01           C
ATOM   1813  O   SER A 324      31.841  -8.216  14.129  1.00 18.39           O
ATOM   1814  CB  SER A 324      33.285  -6.915  16.544  1.00 21.35           C
ATOM   1815  OG  SER A 324      34.591  -6.956  15.984  1.00 23.70           O
ATOM   1816  N   PRO A 325      33.223  -6.682  13.263  1.00 15.59           N
ATOM   1817  CA  PRO A 325      33.998  -5.463  13.348  1.00 14.87           C
ATOM   1818  C   PRO A 325      33.424  -4.245  12.649  1.00 13.60           C
ATOM   1819  O   PRO A 325      34.151  -3.395  12.118  1.00 11.66           O
ATOM   1820  CB  PRO A 325      35.271  -5.900  12.597  1.00 15.85           C
ATOM   1821  CG  PRO A 325      34.738  -6.706  11.465  1.00 14.66           C
ATOM   1822  CD  PRO A 325      33.519  -7.424  12.009  1.00 15.79           C
ATOM   1823  N   ASN A 326      32.094  -4.155  12.570  1.00 11.77           N
ATOM   1824  CA  ASN A 326      31.498  -2.995  11.891  1.00 12.94           C
ATOM   1825  C   ASN A 326      31.860  -1.739  12.649  1.00 11.80           C
ATOM   1826  O   ASN A 326      31.544  -1.610  13.834  1.00 12.08           O
ATOM   1827  CB  ASN A 326      29.962  -3.185  11.837  1.00 10.46           C
ATOM   1828  CG  ASN A 326      29.261  -2.189  10.942  1.00 14.62           C
ATOM   1829  OD1 ASN A 326      29.834  -1.170  10.548  1.00 10.01           O
ATOM   1830  ND2 ASN A 326      27.998  -2.460  10.588  1.00 10.12           N
ATOM   1831  N   PRO A 327      32.488  -0.752  12.015  1.00 12.51           N
ATOM   1832  CA  PRO A 327      32.752   0.534  12.617  1.00 13.36           C
ATOM   1833  C   PRO A 327      31.470   1.295  12.944  1.00 14.81           C
ATOM   1834  O   PRO A 327      31.464   2.112  13.881  1.00 13.79           O
ATOM   1835  CB  PRO A 327      33.535   1.323  11.573  1.00 15.50           C
ATOM   1836  CG  PRO A 327      33.846   0.371  10.476  1.00 16.62           C
ATOM   1837  CD  PRO A 327      32.867  -0.774  10.574  1.00 14.40           C
ATOM   1838  N   ASN A 328      30.402   1.094  12.154  1.00  9.74           N
ATOM   1839  CA  ASN A 328      29.143   1.812  12.402  1.00 10.19           C
ATOM   1840  C   ASN A 328      28.243   0.879  13.204  1.00 12.18           C
ATOM   1841  O   ASN A 328      27.390   0.184  12.676  1.00 11.06           O
ATOM   1842  CB  ASN A 328      28.527   2.226  11.063  1.00 12.80           C
ATOM   1843  CG  ASN A 328      29.456   3.172  10.322  1.00 14.33           C
ATOM   1844  OD1 ASN A 328      30.041   4.051  10.974  1.00 14.84           O
ATOM   1845  ND2 ASN A 328      29.610   3.035   9.011  1.00 11.92           N
ATOM   1846  N   TYR A 329      28.569   0.777  14.497  1.00 13.51           N
ATOM   1847  CA  TYR A 329      27.996  -0.189  15.398  1.00 13.75           C
ATOM   1848  C   TYR A 329      26.695   0.245  16.045  1.00 12.00           C
ATOM   1849  O   TYR A 329      26.132  -0.570  16.783  1.00 12.57           O
ATOM   1850  CB  TYR A 329      29.045  -0.559  16.476  1.00 14.67           C
ATOM   1851  CG  TYR A 329      29.444   0.618  17.333  1.00 18.64           C
ATOM   1852  CD1 TYR A 329      28.684   1.014  18.422  1.00 17.95           C
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ATOM   1853  CD2 TYR A 329      30.605   1.342  17.048  1.00 21.28           C
ATOM   1854  CE1 TYR A 329      29.061   2.101  19.194  1.00 20.94           C
ATOM   1855  CE2 TYR A 329      30.989   2.428  17.813  1.00 21.04           C
ATOM   1856  CZ  TYR A 329      30.207   2.797  18.889  1.00 23.73           C
ATOM   1857  OH  TYR A 329      30.571   3.885  19.660  1.00 26.36           O
ATOM   1858  N   ASP A 330      26.203   1.451  15.785  1.00 12.31           N
ATOM   1859  CA  ASP A 330      24.924   1.894  16.347  1.00 11.92           C
ATOM   1860  C   ASP A 330      24.245   2.760  15.284  1.00 12.73           C
ATOM   1861  O   ASP A 330      24.861   3.070  14.255  1.00 10.45           O
ATOM   1862  CB  ASP A 330      25.062   2.627  17.675  1.00 14.42           C
ATOM   1863  CG  ASP A 330      26.007   3.802  17.654  1.00 15.78           C
ATOM   1864  OD1 ASP A 330      26.263   4.391  16.580  1.00 14.20           O
ATOM   1865  OD2 ASP A 330      26.522   4.184  18.736  1.00 16.79           O
ATOM   1866  N   GLU A 331      22.997   3.146  15.511  1.00 12.67           N
ATOM   1867  CA  GLU A 331      22.269   3.907  14.491  1.00 11.99           C
ATOM   1868  C   GLU A 331      22.816   5.303  14.285  1.00 12.65           C
ATOM   1869  O   GLU A 331      22.811   5.736  13.132  1.00 11.93           O
ATOM   1870  CB  GLU A 331      20.757   3.933  14.768  1.00  7.16           C
ATOM   1871  CG  GLU A 331      20.195   2.502  14.830  1.00  9.29           C
ATOM   1872  CD  GLU A 331      20.294   1.816  13.475  1.00 10.33           C
ATOM   1873  OE1 GLU A 331      19.807   2.404  12.492  1.00  8.53           O
ATOM   1874  OE2 GLU A 331      20.919   0.742  13.355  1.00 10.92           O
ATOM   1875  N   LYS A 332      23.300   5.982  15.324  1.00 13.62           N
ATOM   1876  CA  LYS A 332      23.911   7.298  15.125  1.00 11.69           C
ATOM   1877  C   LYS A 332      25.101   7.222  14.180  1.00 10.86           C
ATOM   1878  O   LYS A 332      25.239   8.051  13.288  1.00 11.24           O
ATOM   1879  CB  LYS A 332      24.338   7.919  16.462  1.00 13.33           C
ATOM   1880  CG  LYS A 332      25.004   9.292  16.311  1.00 15.61           C
ATOM   1881  CD  LYS A 332      25.338   9.875  17.691  1.00 15.28           C
ATOM   1882  CE  LYS A 332      26.003  11.237  17.515  1.00 18.46           C
ATOM   1883  NZ  LYS A 332      26.180  11.941  18.816  1.00 20.17           N
ATOM   1884  N   HIS A 333      25.988   6.233  14.325  1.00 12.13           N
ATOM   1885  CA  HIS A 333      27.130   6.085  13.430  1.00 10.52           C
ATOM   1886  C   HIS A 333      26.633   5.817  12.004  1.00 12.35           C
ATOM   1887  O   HIS A 333      27.197   6.351  11.045  1.00 11.58           O
ATOM   1888  CB  HIS A 333      28.044   4.918  13.808  1.00 12.44           C
ATOM   1889  CG  HIS A 333      29.019   5.254  14.894  1.00 15.77           C
ATOM   1890  ND1 HIS A 333      28.702   5.171  16.226  1.00 15.79           N
ATOM   1891  CD2 HIS A 333      30.309   5.698  14.813  1.00 14.51           C
ATOM   1892  CE1 HIS A 333      29.761   5.541  16.937  1.00 17.94           C
ATOM   1893  NE2 HIS A 333      30.748   5.860  16.108  1.00 15.66           N
ATOM   1894  N   TYR A 334      25.649   4.923  11.878  1.00  7.78           N
ATOM   1895  CA  TYR A 334      25.116   4.617  10.547  1.00 10.34           C
ATOM   1896  C   TYR A 334      24.563   5.856   9.859  1.00 10.74           C
ATOM   1897  O   TYR A 334      24.930   6.168   8.719  1.00 12.95           O
ATOM   1898  CB  TYR A 334      24.051   3.518  10.680  1.00  8.54           C
ATOM   1899  CG  TYR A 334      23.168   3.218   9.489  1.00  7.49           C
ATOM   1900  CD1 TYR A 334      23.622   3.298   8.182  1.00  8.36           C
ATOM   1901  CD2 TYR A 334      21.845   2.805   9.696  1.00  6.89           C
ATOM   1902  CE1 TYR A 334      22.807   3.020   7.098  1.00  9.11           C
ATOM   1903  CE2 TYR A 334      21.026   2.500   8.620  1.00  8.56           C
ATOM   1904  CZ  TYR A 334      21.495   2.610   7.334  1.00  8.78           C
ATOM   1905  OH  TYR A 334      20.668   2.312   6.265  1.00  7.45           O
ATOM   1906  N   ILE A 335      23.655   6.568  10.515  1.00 10.74           N
ATOM   1907  CA  ILE A 335      23.033   7.756   9.937  1.00  9.79           C
ATOM   1908  C   ILE A 335      23.985   8.909   9.679  1.00 13.38           C
ATOM   1909  O   ILE A 335      23.878   9.571   8.629  1.00 11.65           O
ATOM   1910  CB  ILE A 335      21.863   8.192  10.845  1.00 10.61           C
ATOM   1911  CG1 ILE A 335      20.765   7.133  10.688  1.00 12.96           C
ATOM   1912  CG2 ILE A 335      21.366   9.579  10.467  1.00 11.76           C
ATOM   1913  CD1 ILE A 335      19.663   7.170  11.716  1.00 11.64           C
ATOM   1914  N   GLU A 336      24.939   9.139  10.592  1.00  9.63           N
ATOM   1915  CA  GLU A 336      25.935  10.199  10.338  1.00 12.73           C
ATOM   1916  C   GLU A 336      26.784   9.920   9.115  1.00 13.16           C
ATOM   1917  O   GLU A 336      27.124  10.863   8.391  1.00 12.25           O
ATOM   1918  CB  GLU A 336      26.762  10.506  11.584  1.00 12.44           C
ATOM   1919  CG  GLU A 336      25.946  11.357  12.555  1.00 14.68           C
ATOM   1920  CD  GLU A 336      26.731  11.825  13.770  1.00 14.65           C
ATOM   1921  OE1 GLU A 336      27.835  11.294  14.011  1.00 15.28           O
ATOM   1922  OE2 GLU A 336      26.195  12.691  14.491  1.00 14.11           O
ATOM   1923  N   ALA A 337      27.061   8.679   8.764  1.00 14.58           N
ATOM   1924  CA  ALA A 337      27.803   8.337   7.562  1.00 14.30           C
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ATOM   1925  C   ALA A 337      26.930   8.306   6.304  1.00 15.31           C
ATOM   1926  O   ALA A 337      27.381   8.589   5.189  1.00 12.60           O
ATOM   1927  CB  ALA A 337      28.404   6.943   7.746  1.00 14.02           C
ATOM   1928  N   PHE A 338      25.680   7.869   6.450  1.00 10.62           N
ATOM   1929  CA  PHE A 338      24.738   7.697   5.365  1.00  9.89           C
ATOM   1930  C   PHE A 338      24.135   8.979   4.828  1.00  8.70           C
ATOM   1931  O   PHE A 338      24.142   9.215   3.614  1.00 10.69           O
ATOM   1932  CB  PHE A 338      23.614   6.772   5.886  1.00 11.18           C
ATOM   1933  CG  PHE A 338      22.667   6.165   4.897  1.00 11.79           C
ATOM   1934  CD1 PHE A 338      22.982   6.000   3.559  1.00  8.39           C
ATOM   1935  CD2 PHE A 338      21.447   5.671   5.358  1.00  9.80           C
ATOM   1936  CE1 PHE A 338      22.096   5.399   2.685  1.00  8.73           C
ATOM   1937  CE2 PHE A 338      20.552   5.070   4.488  1.00  9.34           C
ATOM   1938  CZ  PHE A 338      20.877   4.933   3.154  1.00 12.90           C
ATOM   1939  N   ARG A 339      23.717   9.901   5.696  1.00  6.96           N
ATOM   1940  CA  ARG A 339      23.084  11.148   5.261  1.00  9.28           C
ATOM   1941  C   ARG A 339      23.860  11.971   4.269  1.00  9.30           C
ATOM   1942  O   ARG A 339      23.310  12.383   3.238  1.00 11.10           O
ATOM   1943  CB  ARG A 339      22.654  11.960   6.482  1.00  9.94           C
ATOM   1944  CG  ARG A 339      22.182  13.380   6.260  1.00 12.91           C
ATOM   1945  CD  ARG A 339      21.045  13.545   5.261  1.00 14.88           C
ATOM   1946  NE  ARG A 339      20.816  14.987   5.111  1.00 16.65           N
ATOM   1947  CZ  ARG A 339      19.982  15.673   5.878  1.00 16.47           C
ATOM   1948  NH1 ARG A 339      19.275  15.042   6.810  1.00 14.80           N
ATOM   1949  NH2 ARG A 339      19.860  16.976   5.679  1.00 18.03           N
ATOM   1950  N   PRO A 340      25.137  12.284   4.493  1.00 12.84           N
ATOM   1951  CA  PRO A 340      25.916  13.074   3.549  1.00 12.72           C
ATOM   1952  C   PRO A 340      25.936  12.483   2.153  1.00 12.78           C
ATOM   1953  O   PRO A 340      25.890  13.216   1.150  1.00 10.55           O
ATOM   1954  CB  PRO A 340      27.312  13.154   4.171  1.00 14.90           C
ATOM   1955  CG  PRO A 340      27.120  12.804   5.606  1.00 16.25           C
ATOM   1956  CD  PRO A 340      25.898  11.930   5.708  1.00 13.20           C
ATOM   1957  N   LEU A 341      26.019  11.148   2.025  1.00 10.11           N
ATOM   1958  CA  LEU A 341      26.019  10.516   0.710  1.00  9.98           C
ATOM   1959  C   LEU A 341      24.670  10.638   0.028  1.00  9.00           C
ATOM   1960  O   LEU A 341      24.592  10.873  -1.181  1.00 10.98           O
ATOM   1961  CB  LEU A 341      26.432   9.040   0.840  1.00 13.65           C
ATOM   1962  CG  LEU A 341      27.918   8.936   1.269  1.00 19.15           C
ATOM   1963  CD1 LEU A 341      28.126   7.751   2.186  1.00 22.88           C
ATOM   1964  CD2 LEU A 341      28.770   8.837   0.023  1.00 23.80           C
ATOM   1965  N   LEU A 342      23.607  10.496   0.815  1.00  8.10           N
ATOM   1966  CA  LEU A 342      22.255  10.660   0.278  1.00 11.17           C
ATOM   1967  C   LEU A 342      22.086  12.103  -0.196  1.00 10.19           C
ATOM   1968  O   LEU A 342      21.525  12.363  -1.263  1.00 10.33           O
ATOM   1969  CB  LEU A 342      21.224  10.337   1.374  1.00  7.92           C
ATOM   1970  CG  LEU A 342      21.098   8.859   1.758  1.00 11.33           C
ATOM   1971  CD1 LEU A 342      20.478   8.717   3.137  1.00  7.93           C
ATOM   1972  CD2 LEU A 342      20.246   8.117   0.723  1.00  8.97           C
ATOM   1973  N   GLU A 343      22.446  13.056   0.667  1.00 10.39           N
ATOM   1974  CA  GLU A 343      22.263  14.475   0.381  1.00 10.01           C
ATOM   1975  C   GLU A 343      23.012  14.922  -0.857  1.00 11.97           C
ATOM   1976  O   GLU A 343      22.491  15.661  -1.708  1.00 12.57           O
ATOM   1977  CB  GLU A 343      22.598  15.318   1.621  1.00 12.83           C
ATOM   1978  CG  GLU A 343      22.294  16.798   1.396  1.00 18.77           C
ATOM   1979  CD  GLU A 343      22.024  17.582   2.655  1.00 19.20           C
ATOM   1980  OE1 GLU A 343      22.291  17.078   3.768  1.00 21.19           O
ATOM   1981  OE2 GLU A 343      21.525  18.727   2.548  1.00 21.18           O
ATOM   1982  N   ALA A 344      24.226  14.410  -1.066  1.00 11.16           N
ATOM   1983  CA  ALA A 344      25.017  14.719  -2.253  1.00 13.43           C
ATOM   1984  C   ALA A 344      24.367  14.212  -3.530  1.00 14.55           C
ATOM   1985  O   ALA A 344      24.661  14.647  -4.657  1.00 15.36           O
ATOM   1986  CB  ALA A 344      26.411  14.105  -2.079  1.00 11.18           C
ATOM   1987  N   ARG A 345      23.488  13.222  -3.423  1.00 12.33           N
ATOM   1988  CA  ARG A 345      22.784  12.630  -4.537  1.00 13.25           C
ATOM   1989  C   ARG A 345      21.347  13.137  -4.630  1.00 14.69           C
ATOM   1990  O   ARG A 345      20.534  12.511  -5.309  1.00 11.15           O
ATOM   1991  CB  ARG A 345      22.841  11.098  -4.429  1.00 13.43           C
ATOM   1992  CG  ARG A 345      24.292  10.619  -4.534  1.00 14.60           C
ATOM   1993  CD  ARG A 345      24.485   9.154  -4.226  1.00 17.43           C
ATOM   1994  NE  ARG A 345      25.862   8.730  -4.452  1.00 17.71           N
ATOM   1995  CZ  ARG A 345      26.928   9.074  -3.738  1.00 23.50           C
ATOM   1996  NH1 ARG A 345      26.863   9.864  -2.669  1.00 17.69           N
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ATOM   1997  NH2 ARG A 345      28.114   8.602  -4.103  1.00 23.81           N
ATOM   1998  N   GLY A 346      21.060  14.280  -4.010  1.00 11.84           N
ATOM   1999  CA  GLY A 346      19.764  14.918  -4.178  1.00 12.92           C
ATOM   2000  C   GLY A 346      18.678  14.563  -3.187  1.00 11.40           C
ATOM   2001  O   GLY A 346      17.527  15.019  -3.337  1.00  8.76           O
ATOM   2002  N   PHE A 347      19.018  13.780  -2.168  1.00 12.55           N
ATOM   2003  CA  PHE A 347      17.996  13.385  -1.177  1.00 11.96           C
ATOM   2004  C   PHE A 347      18.454  13.708   0.227  1.00 11.44           C
ATOM   2005  O   PHE A 347      19.114  12.896   0.872  1.00 11.58           O
ATOM   2006  CB  PHE A 347      17.750  11.876  -1.340  1.00 11.24           C
ATOM   2007  CG  PHE A 347      16.637  11.259  -0.528  1.00 13.04           C
ATOM   2008  CD1 PHE A 347      15.647  12.015   0.069  1.00 12.13           C
ATOM   2009  CD2 PHE A 347      16.586   9.870  -0.389  1.00 11.26           C
ATOM   2010  CE1 PHE A 347      14.626  11.425   0.798  1.00 13.16           C
ATOM   2011  CE2 PHE A 347      15.574   9.270   0.339  1.00 11.40           C
ATOM   2012  CZ  PHE A 347      14.596  10.042   0.925  1.00 11.56           C
ATOM   2013  N   PRO A 348      18.063  14.841   0.799  1.00 13.23           N
ATOM   2014  CA  PRO A 348      18.484  15.260   2.138  1.00 13.82           C
ATOM   2015  C   PRO A 348      17.563  14.639   3.180  1.00 13.97           C
ATOM   2016  O   PRO A 348      16.813  15.285   3.910  1.00 12.48           O
ATOM   2017  CB  PRO A 348      18.308  16.785   2.067  1.00 13.80           C
ATOM   2018  CG  PRO A 348      17.096  16.939   1.201  1.00 14.81           C
ATOM   2019  CD  PRO A 348      17.264  15.889   0.124  1.00 13.97           C
ATOM   2020  N   ALA A 349      17.558  13.315   3.208  1.00 11.56           N
ATOM   2021  CA  ALA A 349      16.700  12.506   4.034  1.00 12.18           C
ATOM   2022  C   ALA A 349      16.841  12.765   5.527  1.00 10.93           C
ATOM   2023  O   ALA A 349      17.917  12.750   6.109  1.00 10.86           O
ATOM   2024  CB  ALA A 349      16.965  11.024   3.749  1.00 10.43           C
ATOM   2025  N   GLN A 350      15.685  12.985   6.130  1.00  9.76           N
ATOM   2026  CA  GLN A 350      15.559  13.090   7.576  1.00 10.00           C
ATOM   2027  C   GLN A 350      15.222  11.676   8.049  1.00  9.55           C
ATOM   2028  O   GLN A 350      14.642  10.910   7.267  1.00 10.83           O
ATOM   2029  CB  GLN A 350      14.492  14.090   7.996  1.00  9.57           C
ATOM   2030  CG  GLN A 350      14.922  15.536   7.812  1.00 12.31           C
ATOM   2031  CD  GLN A 350      16.092  15.926   8.700  1.00 14.64           C
ATOM   2032  OE1 GLN A 350      17.204  16.158   8.231  1.00 16.94           O
ATOM   2033  NE2 GLN A 350      15.868  16.018  10.010  1.00 13.88           N
ATOM   2034  N   PHE A 351      15.663  11.305   9.240  1.00  8.69           N
ATOM   2035  CA  PHE A 351      15.455   9.939   9.698  1.00  8.77           C
ATOM   2036  C   PHE A 351      14.556   9.803  10.896  1.00  8.32           C
ATOM   2037  O   PHE A 351      14.406  10.716  11.711  1.00  8.72           O
ATOM   2038  CB  PHE A 351      16.842   9.380  10.117  1.00 10.92           C
ATOM   2039  CG  PHE A 351      17.733   9.089   8.945  1.00  9.64           C
ATOM   2040  CD1 PHE A 351      18.421  10.103   8.297  1.00 11.78           C
ATOM   2041  CD2 PHE A 351      17.881   7.789   8.496  1.00 10.24           C
ATOM   2042  CE1 PHE A 351      19.219   9.810   7.198  1.00 10.48           C
ATOM   2043  CE2 PHE A 351      18.694   7.489   7.413  1.00  8.56           C
ATOM   2044  CZ  PHE A 351      19.370   8.513   6.771  1.00  9.23           C
ATOM   2045  N   ILE A 352      13.964   8.613  11.033  1.00  7.47           N
ATOM   2046  CA  ILE A 352      13.256   8.251  12.254  1.00  8.08           C
ATOM   2047  C   ILE A 352      13.897   6.909  12.650  1.00  7.08           C
ATOM   2048  O   ILE A 352      14.272   6.129  11.764  1.00  8.28           O
ATOM   2049  CB  ILE A 352      11.745   8.145  12.239  1.00  7.94           C
ATOM   2050  CG1 ILE A 352      11.278   7.093  11.213  1.00  6.92           C
ATOM   2051  CG2 ILE A 352      11.086   9.490  11.954  1.00  7.41           C
ATOM   2052  CD1 ILE A 352       9.764   6.881  11.272  1.00 10.15           C
ATOM   2053  N   VAL A 353      14.104   6.697  13.944  1.00  7.36           N
ATOM   2054  CA  VAL A 353      14.814   5.494  14.390  1.00  8.29           C
ATOM   2055  C   VAL A 353      14.024   4.719  15.438  1.00  7.66           C
ATOM   2056  O   VAL A 353      13.646   5.312  16.448  1.00  7.89           O
ATOM   2057  CB  VAL A 353      16.174   5.868  15.036  1.00  8.48           C
ATOM   2058  CG1 VAL A 353      16.932   4.617  15.465  1.00  7.58           C
ATOM   2059  CG2 VAL A 353      17.043   6.710  14.101  1.00 11.26           C
ATOM   2060  N   ASP A 354      13.806   3.432  15.194  1.00  7.41           N
ATOM   2061  CA  ASP A 354      13.062   2.593  16.147  1.00  8.11           C
ATOM   2062  C   ASP A 354      13.975   2.332  17.346  1.00  9.35           C
ATOM   2063  O   ASP A 354      15.160   2.038  17.191  1.00  7.62           O
ATOM   2064  CB  ASP A 354      12.633   1.294  15.482  1.00  6.20           C
ATOM   2065  CG  ASP A 354      11.586   0.460  16.174  1.00  7.49           C
ATOM   2066  OD1 ASP A 354      11.241   0.771  17.334  1.00  7.99           O
ATOM   2067  OD2 ASP A 354      11.084  -0.522  15.580  1.00  7.38           O
ATOM   2068  N   GLN A 355      13.443   2.571  18.535  1.00 11.53           N
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ATOM	2069	CA	GLN	A	355	14.138	2.358	19.796	1.00	11.42	C
ATOM	2070	C	GLN	A	355	13.214	1.614	20.755	1.00	12.94	C
ATOM	2071	O	GLN	A	355	13.517	1.428	21.939	1.00	9.56	O
ATOM	2072	CB	GLN	A	355	14.598	3.669	20.409	1.00	13.21	C
ATOM	2073	CG	GLN	A	355	15.724	4.377	19.670	1.00	11.58	C
ATOM	2074	CD	GLN	A	355	17.038	3.635	19.792	1.00	13.08	C
ATOM	2075	OE1	GLN	A	355	17.662	3.659	20.856	1.00	11.07	O
ATOM	2076	NE2	GLN	A	355	17.453	2.962	18.722	1.00	12.59	N
ATOM	2077	N	GLY	A	356	12.131	1.044	20.203	1.00	9.58	N
ATOM	2078	CA	GLY	A	356	11.183	0.309	21.030	1.00	11.28	C
ATOM	2079	C	GLY	A	356	11.785	-0.859	21.798	1.00	11.42	C
ATOM	2080	O	GLY	A	356	11.231	-1.286	22.819	1.00	13.11	O
ATOM	2081	N	ARG	A	357	12.845	-1.493	21.300	1.00	9.98	N
ATOM	2082	CA	ARG	A	357	13.452	-2.641	21.980	1.00	10.49	C
ATOM	2083	C	ARG	A	357	14.956	-2.432	22.118	1.00	10.61	C
ATOM	2084	O	ARG	A	357	15.712	-3.405	22.096	1.00	10.60	O
ATOM	2085	CB	ARG	A	357	13.094	-3.918	21.191	1.00	6.30	C
ATOM	2086	CG	ARG	A	357	11.592	-4.235	21.219	1.00	9.33	C
ATOM	2087	CD	ARG	A	357	11.152	-5.573	20.686	1.00	10.11	C
ATOM	2088	NE	ARG	A	357	11.503	-5.805	19.286	1.00	9.06	N
ATOM	2089	CZ	ARG	A	357	11.262	-6.942	18.642	1.00	11.52	C
ATOM	2090	NH1	ARG	A	357	10.671	-7.923	19.318	1.00	10.50	N
ATOM	2091	NH2	ARG	A	357	11.635	-7.125	17.372	1.00	7.18	N
ATOM	2092	N	SER	A	358	15.380	-1.170	22.232	1.00	11.46	N
ATOM	2093	CA	SER	A	358	16.805	-0.824	22.247	1.00	10.13	C
ATOM	2094	C	SER	A	358	17.370	-0.372	23.583	1.00	11.53	C
ATOM	2095	O	SER	A	358	18.539	0.066	23.687	1.00	12.37	O
ATOM	2096	CB	SER	A	358	16.988	0.348	21.245	1.00	9.78	C
ATOM	2097	OG	SER	A	358	16.843	-0.180	19.916	1.00	9.37	O
ATOM	2098	N	GLY	A	359	16.567	-0.459	24.631	1.00	8.41	N
ATOM	2099	CA	GLY	A	359	16.929	0.013	25.945	1.00	11.24	C
ATOM	2100	C	GLY	A	359	18.168	-0.645	26.556	1.00	10.77	C
ATOM	2101	O	GLY	A	359	19.005	0.093	27.066	1.00	14.30	O
ATOM	2102	N	LYS	A	360	18.317	-1.947	26.449	1.00	11.40	N
ATOM	2103	CA	LYS	A	360	19.437	-2.659	27.063	1.00	13.69	C
ATOM	2104	C	LYS	A	360	20.533	-2.957	26.044	1.00	13.62	C
ATOM	2105	O	LYS	A	360	20.292	-3.592	25.016	1.00	12.09	O
ATOM	2106	CB	LYS	A	360	18.945	-3.982	27.662	1.00	12.11	C
ATOM	2107	CG	LYS	A	360	19.889	-4.578	28.705	1.00	17.84	C
ATOM	2108	CD	LYS	A	360	19.223	-5.780	29.374	1.00	23.30	C
ATOM	2109	CE	LYS	A	360	19.989	-6.259	30.595	1.00	29.30	C
ATOM	2110	NZ	LYS	A	360	21.394	-6.616	30.263	1.00	29.46	N
ATOM	2111	N	GLN	A	361	21.721	-2.405	26.310	1.00	12.86	N
ATOM	2112	CA	GLN	A	361	22.870	-2.598	25.421	1.00	14.17	C
ATOM	2113	C	GLN	A	361	24.094	-3.041	26.226	1.00	16.49	C
ATOM	2114	O	GLN	A	361	24.384	-2.414	27.241	1.00	16.24	O
ATOM	2115	CB	GLN	A	361	23.188	-1.268	24.731	1.00	14.32	C
ATOM	2116	CG	GLN	A	361	22.077	-0.680	23.869	1.00	9.89	C
ATOM	2117	CD	GLN	A	361	21.740	-1.556	22.684	1.00	13.07	C
ATOM	2118	OE1	GLN	A	361	22.618	-2.284	22.210	1.00	13.09	O
ATOM	2119	NE2	GLN	A	361	20.502	-1.495	22.177	1.00	8.77	N
ATOM	2120	N	PRO	A	362	24.814	-4.042	25.762	1.00	18.13	N
ATOM	2121	CA	PRO	A	362	24.476	-4.805	24.579	1.00	16.66	C
ATOM	2122	C	PRO	A	362	23.230	-5.656	24.790	1.00	17.75	C
ATOM	2123	O	PRO	A	362	22.883	-5.897	25.958	1.00	15.49	O
ATOM	2124	CB	PRO	A	362	25.648	-5.763	24.397	1.00	19.10	C
ATOM	2125	CG	PRO	A	362	26.715	-5.340	25.342	1.00	20.94	C
ATOM	2126	CD	PRO	A	362	26.022	-4.595	26.441	1.00	19.31	C
ATOM	2127	N	THR	A	363	22.642	-6.190	23.716	1.00	12.07	N
ATOM	2128	CA	THR	A	363	21.485	-7.063	23.909	1.00	13.87	C
ATOM	2129	C	THR	A	363	21.947	-8.483	24.229	1.00	16.38	C
ATOM	2130	O	THR	A	363	23.159	-8.740	24.353	1.00	17.15	O
ATOM	2131	CB	THR	A	363	20.622	-7.100	22.629	1.00	14.61	C
ATOM	2132	OG1	THR	A	363	21.374	-7.829	21.648	1.00	14.52	O
ATOM	2133	CG2	THR	A	363	20.304	-5.693	22.129	1.00	10.96	C
ATOM	2134	N	GLY	A	364	21.033	-9.445	24.237	1.00	14.44	N
ATOM	2135	CA	GLY	A	364	21.397	-10.842	24.429	1.00	16.91	C
ATOM	2136	C	GLY	A	364	21.640	-11.562	23.107	1.00	15.93	C
ATOM	2137	O	GLY	A	364	21.759	-12.796	23.069	1.00	16.01	O
ATOM	2138	N	GLN	A	365	21.670	-10.837	21.990	1.00	13.92	N
ATOM	2139	CA	GLN	A	365	21.895	-11.420	20.681	1.00	12.65	C
ATOM	2140	C	GLN	A	365	23.294	-12.045	20.600	1.00	14.06	C

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ATOM   2141  O   GLN A 365      24.255 -11.390  21.010  1.00 14.30           O
ATOM   2142  CB  GLN A 365      21.821 -10.362  19.565  1.00 11.46           C
ATOM   2143  CG  GLN A 365      20.408  -9.802  19.372  1.00 11.44           C
ATOM   2144  CD  GLN A 365      20.377  -8.530  18.555  1.00  8.49           C
ATOM   2145  OE1 GLN A 365      20.789  -7.483  19.046  1.00 10.68           O
ATOM   2146  NE2 GLN A 365      19.935  -8.604  17.302  1.00 10.40           N
ATOM   2147  N   LYS A 366      23.376 -13.245  20.061  1.00 14.56           N
ATOM   2148  CA  LYS A 366      24.655 -13.923  19.891  1.00 16.55           C
ATOM   2149  C   LYS A 366      25.310 -13.449  18.600  1.00 17.19           C
ATOM   2150  O   LYS A 366      26.529 -13.434  18.461  1.00 14.35           O
ATOM   2151  CB  LYS A 366      24.500 -15.450  19.865  1.00 17.82           C
ATOM   2152  CG  LYS A 366      24.104 -16.000  21.237  1.00 25.09           C
ATOM   2153  CD  LYS A 366      25.167 -15.643  22.277  1.00 28.19           C
ATOM   2154  CE  LYS A 366      26.095 -16.817  22.543  1.00 32.67           C
ATOM   2155  NZ  LYS A 366      25.665 -17.535  23.787  1.00 36.57           N
ATOM   2156  N   GLU A 367      24.488 -13.163  17.595  1.00 14.58           N
ATOM   2157  CA  GLU A 367      24.897 -12.661  16.291  1.00 16.66           C
ATOM   2158  C   GLU A 367      23.940 -11.511  15.939  1.00 16.50           C
ATOM   2159  O   GLU A 367      22.764 -11.520  16.319  1.00 11.08           O
ATOM   2160  CB  GLU A 367      24.900 -13.707  15.190  1.00 18.74           C
ATOM   2161  CG AGLU A 367      25.785 -14.922  15.359  0.50 19.66           C
ATOM   2162  CG BGLU A 367      25.883 -14.840  15.413  0.50 22.22           C
ATOM   2163  CD AGLU A 367      27.269 -14.624  15.434  0.50 21.41           C
ATOM   2164  CD BGLU A 367      25.887 -15.915  14.358  0.50 23.81           C
ATOM   2165  OE1AGLU A 367      27.693 -13.538  14.986  0.50 20.72           O
ATOM   2166  OE1BGLU A 367      25.208 -15.749  13.325  0.50 26.57           O
ATOM   2167  OE2AGLU A 367      28.037 -15.479  15.934  0.50 20.01           O
ATOM   2168  OE2BGLU A 367      26.579 -16.938  14.559  0.50 26.93           O
ATOM   2169  N   TRP A 368      24.439 -10.500  15.250  1.00 13.30           N
ATOM   2170  CA  TRP A 368      23.691  -9.304  14.915  1.00 13.09           C
ATOM   2171  C   TRP A 368      22.463  -9.544  14.061  1.00 12.80           C
ATOM   2172  O   TRP A 368      21.435  -8.871  14.250  1.00 10.69           O
ATOM   2173  CB  TRP A 368      24.611  -8.304  14.183  1.00 14.76           C
ATOM   2174  CG  TRP A 368      24.283  -6.859  14.398  1.00 13.52           C
ATOM   2175  CD1 TRP A 368      23.175  -6.329  14.994  1.00 13.63           C
ATOM   2176  CD2 TRP A 368      25.092  -5.742  14.009  1.00 11.73           C
ATOM   2177  NE1 TRP A 368      23.239  -4.957  15.004  1.00 12.26           N
ATOM   2178  CE2 TRP A 368      24.413  -4.573  14.397  1.00 12.86           C
ATOM   2179  CE3 TRP A 368      26.327  -5.623  13.362  1.00 13.61           C
ATOM   2180  CZ2 TRP A 368      24.922  -3.299  14.169  1.00 10.40           C
ATOM   2181  CZ3 TRP A 368      26.834  -4.357  13.132  1.00 11.45           C
ATOM   2182  CH2 TRP A 368      26.137  -3.208  13.536  1.00 10.27           C
ATOM   2183  N   GLY A 369      22.517 -10.525  13.164  1.00 11.73           N
ATOM   2184  CA  GLY A 369      21.417 -10.878  12.300  1.00 12.49           C
ATOM   2185  C   GLY A 369      20.338 -11.698  13.001  1.00 12.52           C
ATOM   2186  O   GLY A 369      19.412 -12.154  12.332  1.00 13.60           O
ATOM   2187  N   HIS A 370      20.440 -11.932  14.304  1.00 12.82           N
ATOM   2188  CA  HIS A 370      19.397 -12.686  15.022  1.00 12.27           C
ATOM   2189  C   HIS A 370      18.304 -11.697  15.409  1.00 12.62           C
ATOM   2190  O   HIS A 370      18.446 -10.975  16.397  1.00 14.21           O
ATOM   2191  CB  HIS A 370      19.986 -13.391  16.238  1.00 10.86           C
ATOM   2192  CG  HIS A 370      20.928 -14.503  15.853  1.00 13.37           C
ATOM   2193  ND1 HIS A 370      21.663 -15.203  16.783  1.00 15.98           N
ATOM   2194  CD2 HIS A 370      21.262 -15.003  14.637  1.00 16.19           C
ATOM   2195  CE1 HIS A 370      22.387 -16.119  16.152  1.00 15.27           C
ATOM   2196  NE2 HIS A 370      22.165 -16.018  14.854  1.00 15.58           N
ATOM   2197  N   TRP A 371      17.242 -11.647  14.613  1.00 12.56           N
ATOM   2198  CA  TRP A 371      16.209 -10.637  14.827  1.00 12.02           C
ATOM   2199  C   TRP A 371      14.955 -11.117  15.528  1.00 12.14           C
ATOM   2200  O   TRP A 371      14.091 -10.291  15.844  1.00 10.90           O
ATOM   2201  CB  TRP A 371      15.749 -10.126  13.438  1.00  9.54           C
ATOM   2202  CG  TRP A 371      15.366 -11.188  12.462  1.00 11.32           C
ATOM   2203  CD1 TRP A 371      16.152 -11.684  11.461  1.00 14.90           C
ATOM   2204  CD2 TRP A 371      14.111 -11.878  12.343  1.00 10.64           C
ATOM   2205  NE1 TRP A 371      15.477 -12.637  10.750  1.00 15.34           N
ATOM   2206  CE2 TRP A 371      14.216 -12.773  11.274  1.00 12.80           C
ATOM   2207  CE3 TRP A 371      12.913 -11.825  13.070  1.00  6.86           C
ATOM   2208  CZ2 TRP A 371      13.185 -13.631  10.887  1.00 12.65           C
ATOM   2209  CZ3 TRP A 371      11.879 -12.657  12.685  1.00  9.59           C
ATOM   2210  CH2 TRP A 371      12.011 -13.545  11.608  1.00 11.86           C
ATOM   2211  N   CYS A 372      14.810 -12.427  15.725  1.00 11.94           N
ATOM   2212  CA  CYS A 372      13.564 -12.903  16.307  1.00 11.69           C
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ATOM	2213	C	CYS	A	372	13.493	-13.035	17.808	1.00	12.79	C
ATOM	2214	O	CYS	A	372	14.248	-13.776	18.447	1.00	11.89	O
ATOM	2215	CB	CYS	A	372	13.231	-14.231	15.602	1.00	11.72	C
ATOM	2216	SG	CYS	A	372	11.555	-14.776	16.052	1.00	10.80	S
ATOM	2217	N	ASN	A	373	12.580	-12.268	18.414	1.00	10.43	N
ATOM	2218	CA	ASN	A	373	12.319	-12.339	19.851	1.00	11.60	C
ATOM	2219	C	ASN	A	373	13.624	-12.463	20.630	1.00	11.60	C
ATOM	2220	O	ASN	A	373	13.703	-13.286	21.562	1.00	12.62	O
ATOM	2221	CB	ASN	A	373	11.449	-13.567	20.134	1.00	7.20	C
ATOM	2222	CG	ASN	A	373	10.171	-13.675	19.356	1.00	10.48	C
ATOM	2223	OD1	ASN	A	373	9.466	-12.694	19.079	1.00	11.46	O
ATOM	2224	ND2	ASN	A	373	9.828	-14.897	18.961	1.00	9.89	N
ATOM	2225	N	ALA	A	374	14.529	-11.522	20.408	1.00	12.19	N
ATOM	2226	CA	ALA	A	374	15.853	-11.599	21.013	1.00	13.32	C
ATOM	2227	C	ALA	A	374	15.821	-11.449	22.527	1.00	13.60	C
ATOM	2228	O	ALA	A	374	15.140	-10.567	23.058	1.00	10.40	O
ATOM	2229	CB	ALA	A	374	16.755	-10.542	20.389	1.00	13.95	C
ATOM	2230	N	ILE	A	375	16.597	-12.300	23.200	1.00	14.26	N
ATOM	2231	CA	ILE	A	375	16.675	-12.212	24.665	1.00	13.63	C
ATOM	2232	C	ILE	A	375	17.570	-11.053	25.067	1.00	15.61	C
ATOM	2233	O	ILE	A	375	18.305	-10.489	24.247	1.00	14.65	O
ATOM	2234	CB	ILE	A	375	17.201	-13.533	25.262	1.00	13.82	C
ATOM	2235	CG1	ILE	A	375	18.538	-13.952	24.636	1.00	15.63	C
ATOM	2236	CG2	ILE	A	375	16.152	-14.622	25.021	1.00	12.82	C
ATOM	2237	CD1	ILE	A	375	19.210	-15.159	25.270	1.00	15.14	C
ATOM	2238	N	GLY	A	376	17.461	-10.639	26.326	1.00	14.51	N
ATOM	2239	CA	GLY	A	376	18.261	-9.598	26.918	1.00	15.11	C
ATOM	2240	C	GLY	A	376	18.075	-8.206	26.350	1.00	14.35	C
ATOM	2241	O	GLY	A	376	19.008	-7.398	26.293	1.00	12.94	O
ATOM	2242	N	THR	A	377	16.835	-7.910	25.969	1.00	13.43	N
ATOM	2243	CA	THR	A	377	16.458	-6.629	25.411	1.00	14.16	C
ATOM	2244	C	THR	A	377	15.477	-5.919	26.342	1.00	14.52	C
ATOM	2245	O	THR	A	377	14.844	-6.566	27.171	1.00	13.61	O
ATOM	2246	CB	THR	A	377	15.784	-6.781	24.037	1.00	14.23	C
ATOM	2247	OG1	THR	A	377	14.564	-7.531	24.209	1.00	13.57	O
ATOM	2248	CG2	THR	A	377	16.712	-7.512	23.063	1.00	9.16	C
ATOM	2249	N	GLY	A	378	15.386	-4.608	26.215	1.00	14.11	N
ATOM	2250	CA	GLY	A	378	14.490	-3.827	27.054	1.00	13.01	C
ATOM	2251	C	GLY	A	378	13.863	-2.667	26.288	1.00	12.69	C
ATOM	2252	O	GLY	A	378	14.401	-2.278	25.259	1.00	11.68	O
ATOM	2253	N	PHE	A	379	12.748	-2.126	26.771	1.00	11.50	N
ATOM	2254	CA	PHE	A	379	12.139	-0.955	26.156	1.00	12.13	C
ATOM	2255	C	PHE	A	379	13.146	0.189	26.136	1.00	14.61	C
ATOM	2256	O	PHE	A	379	13.843	0.421	27.138	1.00	15.51	O
ATOM	2257	CB	PHE	A	379	10.910	-0.460	26.931	1.00	13.63	C
ATOM	2258	CG	PHE	A	379	9.711	-1.349	26.771	1.00	14.82	C
ATOM	2259	CD1	PHE	A	379	9.141	-1.530	25.520	1.00	11.34	C
ATOM	2260	CD2	PHE	A	379	9.133	-1.974	27.858	1.00	14.44	C
ATOM	2261	CE1	PHE	A	379	8.043	-2.343	25.351	1.00	11.61	C
ATOM	2262	CE2	PHE	A	379	8.038	-2.797	27.688	1.00	14.53	C
ATOM	2263	CZ	PHE	A	379	7.485	-2.989	26.438	1.00	12.96	C
ATOM	2264	N	GLY	A	380	13.236	0.896	25.024	1.00	11.68	N
ATOM	2265	CA	GLY	A	380	14.203	1.966	24.890	1.00	11.35	C
ATOM	2266	C	GLY	A	380	13.642	3.372	25.052	1.00	10.75	C
ATOM	2267	O	GLY	A	380	12.589	3.562	25.653	1.00	12.44	O
ATOM	2268	N	MET	A	381	14.371	4.356	24.542	1.00	10.00	N
ATOM	2269	CA	MET	A	381	13.951	5.754	24.638	1.00	11.50	C
ATOM	2270	C	MET	A	381	12.514	5.941	24.142	1.00	15.24	C
ATOM	2271	O	MET	A	381	12.098	5.313	23.161	1.00	11.19	O
ATOM	2272	CB	MET	A	381	14.891	6.660	23.871	1.00	14.46	C
ATOM	2273	CG	MET	A	381	16.286	6.838	24.438	1.00	18.95	C
ATOM	2274	SD	MET	A	381	17.272	7.998	23.460	1.00	25.67	S
ATOM	2275	CE	MET	A	381	17.087	7.233	21.849	1.00	19.92	C
ATOM	2276	N	ARG	A	382	11.739	6.762	24.866	1.00	15.63	N
ATOM	2277	CA	ARG	A	382	10.352	6.961	24.460	1.00	16.59	C
ATOM	2278	C	ARG	A	382	10.304	7.814	23.195	1.00	12.90	C
ATOM	2279	O	ARG	A	382	11.136	8.698	23.019	1.00	11.25	O
ATOM	2280	CB	ARG	A	382	9.514	7.662	25.518	1.00	19.99	C
ATOM	2281	CG	ARG	A	382	9.720	7.274	26.957	1.00	24.88	C
ATOM	2282	CD	ARG	A	382	9.828	5.763	27.161	1.00	25.60	C
ATOM	2283	NE	ARG	A	382	10.101	5.566	28.556	1.00	31.36	N
ATOM	2284	CZ	ARG	A	382	11.039	4.880	29.179	1.00	28.51	C

	ATOM	2285	NH1	ARG	A	382	11.966	4.178	28.552	1.00	23.21	N
	ATOM	2286	NH2	ARG	A	382	10.969	4.919	30.500	1.00	26.26	N
	ATOM	2287	N	PRO	A	383	9.266	7.621	22.394	1.00	12.79	N
	ATOM	2288	CA	PRO	A	383	9.091	8.404	21.184	1.00	9.96	C
5	ATOM	2289	C	PRO	A	383	9.132	9.890	21.451	1.00	12.67	C
	ATOM	2290	O	PRO	A	383	8.525	10.380	22.418	1.00	10.47	O
	ATOM	2291	CB	PRO	A	383	7.730	7.972	20.634	1.00	9.92	C
	ATOM	2292	CG	PRO	A	383	7.528	6.596	21.190	1.00	12.01	C
	ATOM	2293	CD	PRO	A	383	8.233	6.575	22.534	1.00	11.26	C
10	ATOM	2294	N	THR	A	384	9.863	10.615	20.604	1.00	9.35	N
	ATOM	2295	CA	THR	A	384	9.954	12.066	20.773	1.00	13.08	C
	ATOM	2296	C	THR	A	384	10.452	12.740	19.509	1.00	11.46	C
	ATOM	2297	O	THR	A	384	11.211	12.154	18.744	1.00	11.29	O
	ATOM	2298	CB	THR	A	384	10.902	12.393	21.951	1.00	13.60	C
15	ATOM	2299	OG1	THR	A	384	11.023	13.815	22.086	1.00	14.44	O
	ATOM	2300	CG2	THR	A	384	12.291	11.815	21.716	1.00	17.66	C
	ATOM	2301	N	ALA	A	385	10.043	13.980	19.281	1.00	11.36	N
	ATOM	2302	CA	ALA	A	385	10.497	14.786	18.172	1.00	14.24	C
	ATOM	2303	C	ALA	A	385	11.754	15.560	18.587	1.00	16.91	C
20	ATOM	2304	O	ALA	A	385	12.389	16.192	17.754	1.00	18.52	O
	ATOM	2305	CB	ALA	A	385	9.420	15.795	17.767	1.00	16.27	C
	ATOM	2306	N	ASN	A	386	12.093	15.543	19.873	1.00	16.95	N
	ATOM	2307	CA	ASN	A	386	13.268	16.270	20.367	1.00	19.41	C
	ATOM	2308	C	ASN	A	386	14.431	15.314	20.530	1.00	17.81	C
25	ATOM	2309	O	ASN	A	386	14.702	14.797	21.613	1.00	17.23	O
	ATOM	2310	CB	ASN	A	386	12.912	16.972	21.688	1.00	21.90	C
	ATOM	2311	CG	ASN	A	386	11.843	18.014	21.413	1.00	22.31	C
	ATOM	2312	OD1	ASN	A	386	10.682	17.896	21.800	1.00	26.34	O
	ATOM	2313	ND2	ASN	A	386	12.231	19.061	20.702	1.00	26.26	N
30	ATOM	2314	N	THR	A	387	15.106	15.013	19.414	1.00	14.34	N
	ATOM	2315	CA	THR	A	387	16.162	14.019	19.418	1.00	15.21	C
	ATOM	2316	C	THR	A	387	17.556	14.542	19.710	1.00	17.75	C
	ATOM	2317	O	THR	A	387	18.457	13.726	19.874	1.00	17.94	O
	ATOM	2318	CB	THR	A	387	16.211	13.380	17.996	1.00	15.42	C
35	ATOM	2319	OG1	THR	A	387	16.616	14.412	17.106	1.00	14.59	O
	ATOM	2320	CG2	THR	A	387	14.827	12.893	17.609	1.00	13.57	C
	ATOM	2321	N	GLY	A	388	17.755	15.851	19.622	1.00	19.77	N
	ATOM	2322	CA	GLY	A	388	19.091	16.415	19.810	1.00	23.06	C
	ATOM	2323	C	GLY	A	388	19.990	16.134	18.604	1.00	24.03	C
40	ATOM	2324	O	GLY	A	388	21.211	16.262	18.719	1.00	26.20	O
	ATOM	2325	N	HIS	A	389	19.414	15.755	17.457	1.00	19.40	N
	ATOM	2326	CA	HIS	A	389	20.235	15.493	16.279	1.00	14.57	C
	ATOM	2327	C	HIS	A	389	19.573	16.090	15.049	1.00	14.06	C
	ATOM	2328	O	HIS	A	389	18.457	15.686	14.675	1.00	12.99	O
45	ATOM	2329	CB	HIS	A	389	20.455	13.979	16.134	1.00	13.55	C
	ATOM	2330	CG	HIS	A	389	21.619	13.721	15.216	1.00	13.99	C
	ATOM	2331	ND1	HIS	A	389	21.618	14.056	13.881	1.00	13.44	N
	ATOM	2332	CD2	HIS	A	389	22.833	13.177	15.477	1.00	12.87	C
	ATOM	2333	CE1	HIS	A	389	22.791	13.732	13.345	1.00	12.87	C
50	ATOM	2334	NE2	HIS	A	389	23.540	13.187	14.298	1.00	13.79	N
	ATOM	2335	N	GLN	A	390	20.283	16.950	14.333	1.00	14.11	N
	ATOM	2336	CA	GLN	A	390	19.743	17.625	13.162	1.00	16.20	C
	ATOM	2337	C	GLN	A	390	19.160	16.703	12.094	1.00	13.84	C
	ATOM	2338	O	GLN	A	390	18.334	17.173	11.298	1.00	13.37	O
55	ATOM	2339	CB	GLN	A	390	20.825	18.499	12.505	1.00	20.15	C
	ATOM	2340	CG	GLN	A	390	22.088	17.753	12.106	1.00	31.09	C
	ATOM	2341	CD	GLN	A	390	23.248	18.648	11.720	1.00	35.92	C
	ATOM	2342	OE1	GLN	A	390	24.432	18.318	11.849	1.00	37.48	O
	ATOM	2343	NE2	GLN	A	390	22.936	19.850	11.225	1.00	36.68	N
60	ATOM	2344	N	TYR	A	391	19.663	15.492	11.932	1.00	12.67	N
	ATOM	2345	CA	TYR	A	391	19.258	14.578	10.877	1.00	14.48	C
	ATOM	2346	C	TYR	A	391	18.093	13.650	11.228	1.00	14.99	C
	ATOM	2347	O	TYR	A	391	17.606	12.886	10.378	1.00	12.39	O
	ATOM	2348	CB	TYR	A	391	20.432	13.624	10.597	1.00	15.46	C
65	ATOM	2349	CG	TYR	A	391	21.663	14.210	9.962	1.00	17.10	C
	ATOM	2350	CD1	TYR	A	391	21.685	15.479	9.402	1.00	18.66	C
	ATOM	2351	CD2	TYR	A	391	22.824	13.441	9.903	1.00	19.40	C
	ATOM	2352	CE1	TYR	A	391	22.840	15.979	8.823	1.00	18.42	C
	ATOM	2353	CE2	TYR	A	391	23.986	13.928	9.325	1.00	20.24	C
70	ATOM	2354	CZ	TYR	A	391	23.972	15.200	8.787	1.00	21.11	C
	ATOM	2355	OH	TYR	A	391	25.126	15.679	8.205	1.00	19.62	O
	ATOM	2356	N	VAL	A	392	17.730	13.651	12.493	1.00	12.39	N

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ATOM   2357  CA  VAL A 392      16.714  12.748  13.032  1.00 13.23           C
ATOM   2358  C   VAL A 392      15.480  13.506  13.492  1.00 14.92           C
ATOM   2359  O   VAL A 392      15.499  14.238  14.490  1.00 14.52           O
ATOM   2360  CB  VAL A 392      17.309  11.938  14.201  1.00 11.35           C
ATOM   2361  CG1 VAL A 392      16.324  10.883  14.711  1.00 11.19           C
ATOM   2362  CG2 VAL A 392      18.627  11.253  13.840  1.00 10.63           C
ATOM   2363  N   ASP A 393      14.363  13.331  12.773  1.00 14.20           N
ATOM   2364  CA  ASP A 393      13.107  13.965  13.153  1.00 12.15           C
ATOM   2365  C   ASP A 393      12.552  13.363  14.449  1.00 10.46           C
ATOM   2366  O   ASP A 393      11.886  14.075  15.197  1.00 10.32           O
ATOM   2367  CB  ASP A 393      12.004  13.759  12.120  1.00 10.53           C
ATOM   2368  CG  ASP A 393      12.166  14.596  10.878  1.00 10.53           C
ATOM   2369  OD1 ASP A 393      12.859  15.627  10.979  1.00 10.17           O
ATOM   2370  OD2 ASP A 393      11.618  14.244   9.812  1.00  9.58           O
ATOM   2371  N   ALA A 394      12.782  12.067  14.665  1.00  9.78           N
ATOM   2372  CA  ALA A 394      12.242  11.484  15.881  1.00 10.04           C
ATOM   2373  C   ALA A 394      12.788  10.096  16.175  1.00 10.84           C
ATOM   2374  O   ALA A 394      13.199   9.323  15.326  1.00 11.29           O
ATOM   2375  CB  ALA A 394      10.717  11.284  15.756  1.00  8.93           C
ATOM   2376  N   PHE A 395      12.704   9.829  17.474  1.00 11.98           N
ATOM   2377  CA  PHE A 395      12.906   8.457  17.939  1.00 10.32           C
ATOM   2378  C   PHE A 395      11.474   7.927  18.057  1.00  9.70           C
ATOM   2379  O   PHE A 395      10.594   8.655  18.502  1.00  8.96           O
ATOM   2380  CB  PHE A 395      13.572   8.451  19.292  1.00 10.45           C
ATOM   2381  CG  PHE A 395      15.013   8.896  19.186  1.00 11.98           C
ATOM   2382  CD1 PHE A 395      15.872   8.196  18.372  1.00 13.78           C
ATOM   2383  CD2 PHE A 395      15.486   9.985  19.886  1.00 17.42           C
ATOM   2384  CE1 PHE A 395      17.201   8.543  18.243  1.00 17.08           C
ATOM   2385  CE2 PHE A 395      16.817  10.357  19.774  1.00 16.11           C
ATOM   2386  CZ  PHE A 395      17.670   9.639  18.950  1.00 17.10           C
ATOM   2387  N   VAL A 396      11.281   6.697  17.603  1.00  9.89           N
ATOM   2388  CA  VAL A 396       9.938   6.133  17.603  1.00  7.78           C
ATOM   2389  C   VAL A 396       9.928   4.693  18.058  1.00  8.54           C
ATOM   2390  O   VAL A 396      10.959   4.061  18.276  1.00  8.53           O
ATOM   2391  CB  VAL A 396       9.408   6.161  16.138  1.00  8.91           C
ATOM   2392  CG1 VAL A 396       9.009   7.571  15.714  1.00  7.56           C
ATOM   2393  CG2 VAL A 396      10.490   5.628  15.199  1.00  3.68           C
ATOM   2394  N   TRP A 397       8.725   4.157  18.225  1.00  7.98           N
ATOM   2395  CA  TRP A 397       8.534   2.751  18.552  1.00  8.13           C
ATOM   2396  C   TRP A 397       7.758   2.176  17.359  1.00  9.21           C
ATOM   2397  O   TRP A 397       6.548   2.351  17.308  1.00  6.97           O
ATOM   2398  CB  TRP A 397       7.771   2.525  19.848  1.00 11.38           C
ATOM   2399  CG  TRP A 397       8.576   2.758  21.096  1.00 11.04           C
ATOM   2400  CD1 TRP A 397       9.732   3.467  21.257  1.00 12.89           C
ATOM   2401  CD2 TRP A 397       8.232   2.286  22.409  1.00 11.85           C
ATOM   2402  NE1 TRP A 397      10.148   3.453  22.564  1.00 10.85           N
ATOM   2403  CE2 TRP A 397       9.240   2.719  23.285  1.00 11.47           C
ATOM   2404  CE3 TRP A 397       7.160   1.532  22.912  1.00 10.65           C
ATOM   2405  CZ2 TRP A 397       9.205   2.435  24.650  1.00 11.88           C
ATOM   2406  CZ3 TRP A 397       7.138   1.234  24.268  1.00 12.02           C
ATOM   2407  CH2 TRP A 397       8.150   1.690  25.104  1.00 10.05           C
ATOM   2408  N   VAL A 398       8.495   1.530  16.442  1.00  7.88           N
ATOM   2409  CA  VAL A 398       7.776   1.037  15.254  1.00  5.08           C
ATOM   2410  C   VAL A 398       7.208  -0.352  15.494  1.00  7.54           C
ATOM   2411  O   VAL A 398       6.004  -0.563  15.334  1.00  7.53           O
ATOM   2412  CB  VAL A 398       8.663   1.122  14.004  1.00  6.33           C
ATOM   2413  CG1 VAL A 398       7.796   0.803  12.781  1.00  7.56           C
ATOM   2414  CG2 VAL A 398       9.301   2.503  13.889  1.00  6.40           C
ATOM   2415  N   LYS A 399       8.053  -1.312  15.862  1.00  6.71           N
ATOM   2416  CA  LYS A 399       7.582  -2.655  16.241  1.00  9.29           C
ATOM   2417  C   LYS A 399       7.132  -2.548  17.698  1.00  6.47           C
ATOM   2418  O   LYS A 399       7.938  -2.143  18.536  1.00  9.48           O
ATOM   2419  CB  LYS A 399       8.778  -3.614  16.122  1.00  8.35           C
ATOM   2420  CG  LYS A 399       8.585  -4.990  16.741  1.00 11.13           C
ATOM   2421  CD  LYS A 399       7.431  -5.741  16.061  1.00 12.42           C
ATOM   2422  CE  LYS A 399       7.109  -7.014  16.824  1.00 10.44           C
ATOM   2423  NZ  LYS A 399       6.193  -7.900  16.051  1.00 14.39           N
ATOM   2424  N   PRO A 400       5.876  -2.823  18.016  1.00  7.37           N
ATOM   2425  CA  PRO A 400       5.364  -2.695  19.371  1.00  8.03           C
ATOM   2426  C   PRO A 400       5.914  -3.786  20.282  1.00  9.27           C
ATOM   2427  O   PRO A 400       5.556  -4.936  20.058  1.00  7.71           O
ATOM   2428  CB  PRO A 400       3.845  -2.797  19.194  1.00  9.60           C
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ATOM   2429  CG  PRO A 400       3.626  -2.535  17.731  1.00  9.49           C
ATOM   2430  CD  PRO A 400       4.815  -3.254  17.071  1.00  7.21           C
ATOM   2431  N   GLY A 401       6.840  -3.470  21.163  1.00  9.35           N
ATOM   2432  CA  GLY A 401       7.481  -4.482  22.015  1.00 10.39           C
ATOM   2433  C   GLY A 401       6.416  -5.254  22.797  1.00 10.56           C
ATOM   2434  O   GLY A 401       5.572  -4.651  23.440  1.00 10.17           O
ATOM   2435  N   GLY A 402       6.502  -6.578  22.746  1.00 12.76           N
ATOM   2436  CA  GLY A 402       5.533  -7.434  23.424  1.00 11.36           C
ATOM   2437  C   GLY A 402       4.747  -8.227  22.379  1.00 14.25           C
ATOM   2438  O   GLY A 402       4.255  -9.313  22.683  1.00 14.26           O
ATOM   2439  N   GLU A 403       4.627  -7.697  21.160  1.00 13.06           N
ATOM   2440  CA  GLU A 403       3.989  -8.425  20.060  1.00 12.73           C
ATOM   2441  C   GLU A 403       5.086  -9.268  19.399  1.00 12.75           C
ATOM   2442  O   GLU A 403       6.158  -8.763  19.089  1.00 11.76           O
ATOM   2443  CB  GLU A 403       3.323  -7.492  19.035  1.00 11.21           C
ATOM   2444  CG  GLU A 403       2.201  -6.714  19.718  1.00 14.19           C
ATOM   2445  CD  GLU A 403       1.454  -5.720  18.847  1.00 15.93           C
ATOM   2446  OE1 GLU A 403       1.824  -5.584  17.674  1.00 12.13           O
ATOM   2447  OE2 GLU A 403       0.493  -5.084  19.329  1.00 14.54           O
ATOM   2448  N   CYS A 404       4.817 -10.548  19.226  1.00 11.86           N
ATOM   2449  CA  CYS A 404       5.763 -11.506  18.724  1.00 13.61           C
ATOM   2450  C   CYS A 404       6.329 -11.302  17.327  1.00 13.64           C
ATOM   2451  O   CYS A 404       5.632 -10.838  16.440  1.00 12.45           O
ATOM   2452  CB  CYS A 404       5.069 -12.891  18.731  1.00 10.78           C
ATOM   2453  SG  CYS A 404       6.348 -14.186  18.843  1.00 10.02           S
ATOM   2454  N   ASP A 405       7.568 -11.748  17.139  1.00 12.58           N
ATOM   2455  CA  ASP A 405       8.211 -11.697  15.830  1.00 11.30           C
ATOM   2456  C   ASP A 405       7.958 -12.975  15.041  1.00 12.96           C
ATOM   2457  O   ASP A 405       8.143 -12.984  13.822  1.00 11.87           O
ATOM   2458  CB  ASP A 405       9.722 -11.515  16.026  1.00 12.67           C
ATOM   2459  CG  ASP A 405      10.085 -10.167  16.588  1.00 14.88           C
ATOM   2460  OD1 ASP A 405       9.501  -9.124  16.182  1.00 13.52           O
ATOM   2461  OD2 ASP A 405      10.960 -10.152  17.483  1.00 12.49           O
ATOM   2462  N   GLY A 406       7.571 -14.072  15.703  1.00 11.55           N
ATOM   2463  CA  GLY A 406       7.388 -15.337  15.012  1.00 10.92           C
ATOM   2464  C   GLY A 406       7.336 -16.513  15.991  1.00 11.09           C
ATOM   2465  O   GLY A 406       7.907 -16.438  17.082  1.00 10.50           O
ATOM   2466  N   THR A 407       6.621 -17.564  15.592  1.00 12.63           N
ATOM   2467  CA  THR A 407       6.463 -18.725  16.472  1.00 13.63           C
ATOM   2468  C   THR A 407       7.768 -19.496  16.592  1.00 13.58           C
ATOM   2469  O   THR A 407       8.543 -19.531  15.636  1.00 14.00           O
ATOM   2470  CB  THR A 407       5.363 -19.678  15.962  1.00 14.88           C
ATOM   2471  OG1 THR A 407       5.269 -20.817  16.832  1.00 15.36           O
ATOM   2472  CG2 THR A 407       5.642 -20.164  14.551  1.00 12.17           C
ATOM   2473  N   SER A 408       7.998 -20.112  17.758  1.00 13.91           N
ATOM   2474  CA  SER A 408       9.200 -20.921  17.934  1.00 13.96           C
ATOM   2475  C   SER A 408       8.883 -22.394  17.664  1.00 18.94           C
ATOM   2476  O   SER A 408       9.746 -23.266  17.777  1.00 18.78           O
ATOM   2477  CB  SER A 408       9.773 -20.761  19.340  1.00 17.90           C
ATOM   2478  OG  SER A 408       8.765 -21.027  20.306  1.00 21.37           O
ATOM   2479  N   ASP A 409       7.614 -22.691  17.383  1.00 18.86           N
ATOM   2480  CA  ASP A 409       7.227 -24.074  17.088  1.00 20.41           C
ATOM   2481  C   ASP A 409       7.796 -24.460  15.732  1.00 21.46           C
ATOM   2482  O   ASP A 409       7.283 -24.085  14.674  1.00 21.42           O
ATOM   2483  CB  ASP A 409       5.719 -24.246  17.124  1.00 19.32           C
ATOM   2484  CG  ASP A 409       5.209 -25.619  16.735  1.00 19.94           C
ATOM   2485  OD1 ASP A 409       5.950 -26.476  16.230  1.00 18.83           O
ATOM   2486  OD2 ASP A 409       3.992 -25.837  16.926  1.00 22.26           O
ATOM   2487  N   THR A 410       8.814 -25.319  15.731  1.00 20.78           N
ATOM   2488  CA  THR A 410       9.483 -25.741  14.511  1.00 20.71           C
ATOM   2489  C   THR A 410       8.594 -26.480  13.529  1.00 20.75           C
ATOM   2490  O   THR A 410       8.950 -26.616  12.341  1.00 21.83           O
ATOM   2491  CB  THR A 410      10.740 -26.587  14.805  1.00 22.31           C
ATOM   2492  OG1 THR A 410      10.353 -27.871  15.314  1.00 21.56           O
ATOM   2493  CG2 THR A 410      11.635 -25.916  15.836  1.00 19.75           C
ATOM   2494  N   THR A 411       7.457 -26.997  13.952  1.00 21.25           N
ATOM   2495  CA  THR A 411       6.543 -27.698  13.067  1.00 21.65           C
ATOM   2496  C   THR A 411       5.487 -26.771  12.469  1.00 20.71           C
ATOM   2497  O   THR A 411       4.799 -27.221  11.556  1.00 20.88           O
ATOM   2498  CB  THR A 411       5.826 -28.862  13.785  1.00 24.84           C
ATOM   2499  OG1 THR A 411       4.821 -28.357  14.673  1.00 24.15           O
ATOM   2500  CG2 THR A 411       6.840 -29.693  14.565  1.00 24.12           C
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ATOM   2501  N   ALA A 412       5.368 -25.533  12.934  1.00 18.34           N
ATOM   2502  CA  ALA A 412       4.351 -24.629  12.395  1.00 17.63           C
ATOM   2503  C   ALA A 412       4.635 -24.172  10.973  1.00 18.97           C
ATOM   2504  O   ALA A 412       5.764 -23.901  10.561  1.00 15.98           O
ATOM   2505  CB  ALA A 412       4.192 -23.407  13.292  1.00 18.31           C
ATOM   2506  N   ALA A 413       3.575 -24.031  10.184  1.00 17.60           N
ATOM   2507  CA  ALA A 413       3.653 -23.587   8.805  1.00 21.03           C
ATOM   2508  C   ALA A 413       4.491 -22.321   8.632  1.00 21.07           C
ATOM   2509  O   ALA A 413       5.343 -22.276   7.737  1.00 22.24           O
ATOM   2510  CB  ALA A 413       2.245 -23.281   8.288  1.00 18.70           C
ATOM   2511  N   ARG A 414       4.275 -21.317   9.477  1.00 18.99           N
ATOM   2512  CA  ARG A 414       5.015 -20.061   9.328  1.00 19.30           C
ATOM   2513  C   ARG A 414       6.351 -19.995  10.047  1.00 19.29           C
ATOM   2514  O   ARG A 414       6.942 -18.912  10.163  1.00 15.93           O
ATOM   2515  CB  ARG A 414       4.102 -18.916   9.809  1.00 22.81           C
ATOM   2516  CG AARG A 414       2.677 -19.063   9.278  0.50 20.76           C
ATOM   2517  CG BARG A 414       2.786 -18.787   9.061  0.50 24.56           C
ATOM   2518  CD AARG A 414       1.943 -17.737   9.281  0.50 22.28           C
ATOM   2519  CD BARG A 414       1.923 -17.686   9.673  0.50 26.51           C
ATOM   2520  NE AARG A 414       1.743 -17.207  10.620  0.50 18.79           N
ATOM   2521  NE BARG A 414       0.679 -17.499   8.942  0.50 27.44           N
ATOM   2522  CZ AARG A 414       1.418 -15.944  10.873  0.50 20.76           C
ATOM   2523  CZ BARG A 414       0.472 -16.727   7.885  0.50 30.07           C
ATOM   2524 NH1AARG A 414       1.277 -15.085   9.866  0.50 21.84           N
ATOM   2525 NH1BARG A 414       1.434 -15.980   7.357  0.50 30.38           N
ATOM   2526 NH2AARG A 414       1.246 -15.526  12.118  0.50 17.69           N
ATOM   2527 NH2BARG A 414      -0.737 -16.674   7.336  0.50 30.89           N
ATOM   2528  N   TYR A 415       6.851 -21.123  10.551  1.00 16.76           N
ATOM   2529  CA  TYR A 415       8.092 -21.127  11.305  1.00 16.15           C
ATOM   2530  C   TYR A 415       9.283 -20.586  10.525  1.00 15.10           C
ATOM   2531  O   TYR A 415       9.565 -21.006   9.408  1.00 14.92           O
ATOM   2532  CB  TYR A 415       8.404 -22.559  11.775  1.00 14.85           C
ATOM   2533  CG  TYR A 415       9.711 -22.671  12.527  1.00 14.79           C
ATOM   2534  CD1 TYR A 415       9.840 -22.118  13.791  1.00 14.80           C
ATOM   2535  CD2 TYR A 415      10.807 -23.310  11.974  1.00 16.26           C
ATOM   2536  CE1 TYR A 415      11.029 -22.213  14.501  1.00 17.75           C
ATOM   2537  CE2 TYR A 415      12.001 -23.410  12.666  1.00 16.07           C
ATOM   2538  CZ  TYR A 415      12.102 -22.857  13.929  1.00 15.93           C
ATOM   2539  OH  TYR A 415      13.272 -22.955  14.629  1.00 15.69           O
ATOM   2540  N   ASP A 416      10.028 -19.692  11.161  1.00 14.36           N
ATOM   2541  CA  ASP A 416      11.270 -19.162  10.595  1.00 15.54           C
ATOM   2542  C   ASP A 416      12.364 -19.687  11.520  1.00 15.69           C
ATOM   2543  O   ASP A 416      12.244 -19.414  12.727  1.00 15.39           O
ATOM   2544  CB  ASP A 416      11.263 -17.629  10.596  1.00 13.93           C
ATOM   2545  CG  ASP A 416      12.503 -17.056   9.930  1.00 17.71           C
ATOM   2546  OD1 ASP A 416      13.645 -17.413  10.296  1.00 14.36           O
ATOM   2547  OD2 ASP A 416      12.319 -16.230   9.005  1.00 16.35           O
ATOM   2548  N   TYR A 417      13.418 -20.349  11.056  1.00 14.52           N
ATOM   2549  CA  TYR A 417      14.439 -20.884  11.946  1.00 15.93           C
ATOM   2550  C   TYR A 417      15.086 -19.865  12.865  1.00 14.32           C
ATOM   2551  O   TYR A 417      15.628 -20.217  13.939  1.00 14.33           O
ATOM   2552  CB  TYR A 417      15.540 -21.642  11.168  1.00 16.81           C
ATOM   2553  CG  TYR A 417      16.541 -20.724  10.494  1.00 20.04           C
ATOM   2554  CD1 TYR A 417      17.627 -20.235  11.208  1.00 20.88           C
ATOM   2555  CD2 TYR A 417      16.400 -20.328   9.171  1.00 21.55           C
ATOM   2556  CE1 TYR A 417      18.541 -19.371  10.638  1.00 20.95           C
ATOM   2557  CE2 TYR A 417      17.325 -19.485   8.582  1.00 22.81           C
ATOM   2558  CZ  TYR A 417      18.395 -19.023   9.314  1.00 21.34           C
ATOM   2559  OH  TYR A 417      19.311 -18.175   8.744  1.00 23.68           O
ATOM   2560  N   HIS A 418      15.130 -18.583  12.513  1.00 10.49           N
ATOM   2561  CA  HIS A 418      15.625 -17.553  13.424  1.00 10.60           C
ATOM   2562  C   HIS A 418      14.864 -17.517  14.745  1.00 11.16           C
ATOM   2563  O   HIS A 418      15.403 -17.133  15.785  1.00 11.75           O
ATOM   2564  CB  HIS A 418      15.527 -16.146  12.805  1.00 12.33           C
ATOM   2565  CG  HIS A 418      16.405 -15.928  11.618  1.00 13.49           C
ATOM   2566  ND1 HIS A 418      15.984 -16.202  10.344  1.00 14.03           N
ATOM   2567  CD2 HIS A 418      17.678 -15.457  11.512  1.00 17.01           C
ATOM   2568  CE1 HIS A 418      16.951 -15.914   9.484  1.00 17.13           C
ATOM   2569  NE2 HIS A 418      17.973 -15.463  10.166  1.00 17.38           N
ATOM   2570  N   CYS A 419      13.593 -17.920  14.773  1.00 11.97           N
ATOM   2571  CA  CYS A 419      12.797 -17.924  15.985  1.00 11.38           C
ATOM   2572  C   CYS A 419      13.059 -19.153  16.851  1.00 13.76           C
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	ATOM	2573	O	CYS	A	419	12.586	-19.168	17.988	1.00 15.28	O
	ATOM	2574	CB	CYS	A	419	11.311	-17.770	15.624	1.00 14.89	C
	ATOM	2575	SG	CYS	A	419	11.078	-16.183	14.736	1.00 9.92	S
	ATOM	2576	N	GLY	A	420	13.820	-20.128	16.385	1.00 14.63	N
5	ATOM	2577	CA	GLY	A	420	14.216	-21.270	17.192	1.00 17.14	C
	ATOM	2578	C	GLY	A	420	15.661	-21.199	17.670	1.00 17.33	C
	ATOM	2579	O	GLY	A	420	16.100	-22.119	18.379	1.00 18.09	O
	ATOM	2580	N	LEU	A	421	16.413	-20.130	17.439	1.00 16.44	N
	ATOM	2581	CA	LEU	A	421	17.797	-20.054	17.897	1.00 17.26	C
10	ATOM	2582	C	LEU	A	421	17.883	-19.936	19.418	1.00 17.93	C
	ATOM	2583	O	LEU	A	421	16.933	-19.554	20.111	1.00 15.23	O
	ATOM	2584	CB	LEU	A	421	18.490	-18.850	17.252	1.00 19.03	C
	ATOM	2585	CG	LEU	A	421	18.537	-18.852	15.714	1.00 18.09	C
	ATOM	2586	CD1	LEU	A	421	19.043	-17.505	15.216	1.00 15.42	C
15	ATOM	2587	CD2	LEU	A	421	19.391	-20.003	15.222	1.00 16.17	C
	ATOM	2588	N	GLU	A	422	19.077	-20.155	19.955	1.00 19.82	N
	ATOM	2589	CA	GLU	A	422	19.362	-20.089	21.379	1.00 21.55	C
	ATOM	2590	C	GLU	A	422	19.103	-18.731	22.009	1.00 18.27	C
	ATOM	2591	O	GLU	A	422	18.814	-18.633	23.210	1.00 18.28	O
20	ATOM	2592	CB	GLU	A	422	20.816	-20.501	21.680	1.00 28.44	C
	ATOM	2593	CG	GLU	A	422	21.858	-19.465	21.298	1.00 34.64	C
	ATOM	2594	CD	GLU	A	422	23.283	-19.756	21.724	1.00 40.13	C
	ATOM	2595	OE1	GLU	A	422	23.508	-20.174	22.884	1.00 40.63	O
	ATOM	2596	OE2	GLU	A	422	24.200	-19.557	20.890	1.00 39.34	O
25	ATOM	2597	N	ASP	A	423	19.199	-17.648	21.248	1.00 15.87	N
	ATOM	2598	CA	ASP	A	423	18.961	-16.326	21.824	1.00 15.75	C
	ATOM	2599	C	ASP	A	423	17.572	-15.788	21.516	1.00 14.49	C
	ATOM	2600	O	ASP	A	423	17.354	-14.575	21.628	1.00 13.81	O
	ATOM	2601	CB	ASP	A	423	20.051	-15.348	21.374	1.00 14.73	C
30	ATOM	2602	CG	ASP	A	423	20.189	-15.332	19.865	1.00 17.03	C
	ATOM	2603	OD1	ASP	A	423	19.298	-15.870	19.164	1.00 18.38	O
	ATOM	2604	OD2	ASP	A	423	21.185	-14.765	19.375	1.00 18.33	O
	ATOM	2605	N	ALA	A	424	16.653	-16.628	21.073	1.00 15.63	N
	ATOM	2606	CA	ALA	A	424	15.267	-16.220	20.826	1.00 15.39	C
35	ATOM	2607	C	ALA	A	424	14.431	-16.759	21.990	1.00 16.55	C
	ATOM	2608	O	ALA	A	424	14.564	-17.940	22.324	1.00 15.95	O
	ATOM	2609	CB	ALA	A	424	14.740	-16.793	19.521	1.00 14.10	C
	ATOM	2610	N	LEU	A	425	13.624	-15.918	22.605	1.00 14.20	N
	ATOM	2611	CA	LEU	A	425	12.811	-16.351	23.734	1.00 17.25	C
40	ATOM	2612	C	LEU	A	425	11.750	-17.347	23.322	1.00 16.76	C
	ATOM	2613	O	LEU	A	425	11.023	-17.180	22.338	1.00 14.13	O
	ATOM	2614	CB	LEU	A	425	12.173	-15.139	24.432	1.00 14.23	C
	ATOM	2615	CG	LEU	A	425	11.530	-15.462	25.794	1.00 16.28	C
	ATOM	2616	CD1	LEU	A	425	12.589	-15.822	26.830	1.00 13.47	C
45	ATOM	2617	CD2	LEU	A	425	10.699	-14.276	26.275	1.00 11.04	C
	ATOM	2618	N	LYS	A	426	11.687	-18.484	24.030	1.00 19.88	N
	ATOM	2619	CA	LYS	A	426	10.716	-19.525	23.688	1.00 21.65	C
	ATOM	2620	C	LYS	A	426	10.037	-20.042	24.957	1.00 24.87	C
	ATOM	2621	O	LYS	A	426	10.554	-19.857	26.061	1.00 25.02	O
50	ATOM	2622	CB	LYS	A	426	11.353	-20.704	22.973	1.00 22.22	C
	ATOM	2623	CG	LYS	A	426	12.301	-20.470	21.820	1.00 25.86	C
	ATOM	2624	CD	LYS	A	426	13.131	-21.720	21.534	1.00 24.57	C
	ATOM	2625	CE	LYS	A	426	14.537	-21.372	21.131	1.00 22.74	C
	ATOM	2626	NZ	LYS	A	426	15.360	-20.784	22.223	1.00 19.12	N
55	ATOM	2627	N	PRO	A	427	8.875	-20.650	24.779	1.00 24.38	N
	ATOM	2628	CA	PRO	A	427	8.231	-20.812	23.484	1.00 23.90	C
	ATOM	2629	C	PRO	A	427	7.534	-19.528	23.070	1.00 20.95	C
	ATOM	2630	O	PRO	A	427	7.078	-18.785	23.937	1.00 21.24	O
	ATOM	2631	CB	PRO	A	427	7.200	-21.915	23.737	1.00 25.67	C
60	ATOM	2632	CG	PRO	A	427	6.778	-21.658	25.151	1.00 26.78	C
	ATOM	2633	CD	PRO	A	427	8.050	-21.245	25.866	1.00 27.38	C
	ATOM	2634	N	ALA	A	428	7.433	-19.256	21.776	1.00 17.93	N
	ATOM	2635	CA	ALA	A	428	6.834	-18.004	21.307	1.00 17.59	C
	ATOM	2636	C	ALA	A	428	5.612	-18.293	20.440	1.00 16.73	C
65	ATOM	2637	O	ALA	A	428	5.598	-19.276	19.698	1.00 14.70	O
	ATOM	2638	CB	ALA	A	428	7.896	-17.272	20.477	1.00 14.41	C
	ATOM	2639	N	PRO	A	429	4.581	-17.459	20.552	1.00 16.24	N
	ATOM	2640	CA	PRO	A	429	3.359	-17.630	19.782	1.00 15.56	C
	ATOM	2641	C	PRO	A	429	3.503	-17.189	18.339	1.00 17.33	C
70	ATOM	2642	O	PRO	A	429	4.597	-16.771	17.953	1.00 18.47	O
	ATOM	2643	CB	PRO	A	429	2.370	-16.766	20.545	1.00 15.22	C
	ATOM	2644	CG	PRO	A	429	3.202	-15.655	21.093	1.00 16.97	C

ATOM	2645	CD	PRO	A	429	4.541	-16.273	21.445	1.00	14.34	C
ATOM	2646	N	GLU	A	430	2.424	-17.134	17.555	1.00	17.54	N
ATOM	2647	CA	GLU	A	430	2.515	-16.678	16.174	1.00	18.00	C
ATOM	2648	C	GLU	A	430	2.930	-15.213	16.053	1.00	17.87	C
ATOM	2649	O	GLU	A	430	2.727	-14.430	16.984	1.00	16.31	O
ATOM	2650	CB	GLU	A	430	1.178	-16.888	15.458	1.00	19.98	C
ATOM	2651	CG	GLU	A	430	0.909	-18.344	15.123	1.00	23.53	C
ATOM	2652	CD	GLU	A	430	1.798	-18.890	14.029	1.00	25.88	C
ATOM	2653	OE1	GLU	A	430	2.298	-18.118	13.177	1.00	24.55	O
ATOM	2654	OE2	GLU	A	430	1.988	-20.125	14.001	1.00	23.45	O
ATOM	2655	N	ALA	A	431	3.558	-14.862	14.928	1.00	14.19	N
ATOM	2656	CA	ALA	A	431	3.987	-13.479	14.726	1.00	14.89	C
ATOM	2657	C	ALA	A	431	2.811	-12.525	14.944	1.00	14.00	C
ATOM	2658	O	ALA	A	431	1.729	-12.886	14.482	1.00	12.71	O
ATOM	2659	CB	ALA	A	431	4.454	-13.236	13.297	1.00	13.64	C
ATOM	2660	N	GLY	A	432	3.016	-11.376	15.558	1.00	13.17	N
ATOM	2661	CA	GLY	A	432	1.951	-10.409	15.763	1.00	13.80	C
ATOM	2662	C	GLY	A	432	1.089	-10.628	16.996	1.00	17.04	C
ATOM	2663	O	GLY	A	432	0.360	-9.710	17.409	1.00	16.26	O
ATOM	2664	N	GLN	A	433	1.144	-11.803	17.615	1.00	14.84	N
ATOM	2665	CA	GLN	A	433	0.380	-12.142	18.801	1.00	16.45	C
ATOM	2666	C	GLN	A	433	1.096	-11.700	20.060	1.00	14.64	C
ATOM	2667	O	GLN	A	433	2.313	-11.528	20.066	1.00	15.80	O
ATOM	2668	CB	GLN	A	433	0.121	-13.666	18.842	1.00	16.97	C
ATOM	2669	CG	GLN	A	433	-0.722	-14.148	17.672	1.00	21.15	C
ATOM	2670	CD	GLN	A	433	-2.152	-13.657	17.859	1.00	26.58	C
ATOM	2671	OE1	GLN	A	433	-2.785	-13.900	18.885	1.00	30.03	O
ATOM	2672	NE2	GLN	A	433	-2.665	-12.937	16.878	1.00	27.04	N
ATOM	2673	N	TRP	A	434	0.300	-11.412	21.091	1.00	13.63	N
ATOM	2674	CA	TRP	A	434	0.914	-10.957	22.328	1.00	13.82	C
ATOM	2675	C	TRP	A	434	1.836	-12.050	22.868	1.00	14.46	C
ATOM	2676	O	TRP	A	434	1.502	-13.228	22.850	1.00	10.69	O
ATOM	2677	CB	TRP	A	434	-0.154	-10.593	23.346	1.00	15.85	C
ATOM	2678	CG	TRP	A	434	0.428	-9.807	24.484	1.00	15.45	C
ATOM	2679	CD1	TRP	A	434	0.526	-10.224	25.782	1.00	16.09	C
ATOM	2680	CD2	TRP	A	434	0.986	-8.495	24.434	1.00	15.80	C
ATOM	2681	NE1	TRP	A	434	1.096	-9.237	26.546	1.00	15.71	N
ATOM	2682	CE2	TRP	A	434	1.406	-8.170	25.737	1.00	15.27	C
ATOM	2683	CE3	TRP	A	434	1.165	-7.546	23.413	1.00	13.90	C
ATOM	2684	CZ2	TRP	A	434	1.954	-6.928	26.064	1.00	13.43	C
ATOM	2685	CZ3	TRP	A	434	1.730	-6.334	23.736	1.00	12.47	C
ATOM	2686	CH2	TRP	A	434	2.113	-6.025	25.050	1.00	10.96	C
ATOM	2687	N	PHE	A	435	3.007	-11.614	23.306	1.00	15.80	N
ATOM	2688	CA	PHE	A	435	4.010	-12.527	23.875	1.00	17.64	C
ATOM	2689	C	PHE	A	435	4.340	-11.975	25.258	1.00	15.88	C
ATOM	2690	O	PHE	A	435	5.267	-11.206	25.504	1.00	16.07	O
ATOM	2691	CB	PHE	A	435	5.198	-12.625	22.948	1.00	16.11	C
ATOM	2692	CG	PHE	A	435	6.263	-13.636	23.222	1.00	17.40	C
ATOM	2693	CD1	PHE	A	435	6.222	-14.491	24.314	1.00	17.26	C
ATOM	2694	CD2	PHE	A	435	7.366	-13.698	22.372	1.00	13.51	C
ATOM	2695	CE1	PHE	A	435	7.232	-15.406	24.545	1.00	16.81	C
ATOM	2696	CE2	PHE	A	435	8.384	-14.610	22.607	1.00	18.11	C
ATOM	2697	CZ	PHE	A	435	8.321	-15.462	23.693	1.00	16.99	C
ATOM	2698	N	ASN	A	436	3.505	-12.379	26.236	1.00	14.43	N
ATOM	2699	CA	ASN	A	436	3.603	-11.789	27.558	1.00	15.23	C
ATOM	2700	C	ASN	A	436	4.959	-11.953	28.216	1.00	13.48	C
ATOM	2701	O	ASN	A	436	5.474	-10.996	28.800	1.00	15.55	O
ATOM	2702	CB	ASN	A	436	2.453	-12.265	28.469	1.00	15.43	C
ATOM	2703	CG	ASN	A	436	2.294	-11.217	29.567	1.00	21.94	C
ATOM	2704	OD1	ASN	A	436	2.047	-10.048	29.251	1.00	19.99	O
ATOM	2705	ND2	ASN	A	436	2.495	-11.633	30.819	1.00	16.63	N
ATOM	2706	N	GLU	A	437	5.575	-13.115	28.065	1.00	14.81	N
ATOM	2707	CA	GLU	A	437	6.906	-13.383	28.615	1.00	16.35	C
ATOM	2708	C	GLU	A	437	7.913	-12.371	28.067	1.00	15.03	C
ATOM	2709	O	GLU	A	437	8.773	-11.859	28.771	1.00	12.30	O
ATOM	2710	CB	GLU	A	437	7.312	-14.802	28.223	1.00	20.49	C
ATOM	2711	CG	GLU	A	437	6.478	-15.940	28.755	1.00	27.91	C
ATOM	2712	CD	GLU	A	437	5.164	-16.216	28.064	1.00	31.40	C
ATOM	2713	OE1	GLU	A	437	4.791	-15.602	27.043	1.00	27.37	O
ATOM	2714	OE2	GLU	A	437	4.424	-17.103	28.559	1.00	34.05	O
ATOM	2715	N	TYR	A	438	7.784	-12.043	26.782	1.00	15.08	N
ATOM	2716	CA	TYR	A	438	8.656	-11.055	26.150	1.00	14.63	C

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ATOM   2717  C   TYR A 438      8.387  -9.641  26.633  1.00 13.43           C
ATOM   2718  O   TYR A 438      9.282  -8.804  26.842  1.00 12.18           O
ATOM   2719  CB  TYR A 438      8.508 -11.159  24.615  1.00 12.75           C
ATOM   2720  CG  TYR A 438      9.747 -10.558  23.964  1.00 13.57           C
ATOM   2721  CD1 TYR A 438     10.865 -11.352  23.764  1.00 13.67           C
ATOM   2722  CD2 TYR A 438      9.792  -9.227  23.574  1.00 12.63           C
ATOM   2723  CE1 TYR A 438     11.992 -10.814  23.176  1.00 11.80           C
ATOM   2724  CE2 TYR A 438     10.918  -8.682  22.992  1.00  9.14           C
ATOM   2725  CZ  TYR A 438     12.029  -9.495  22.807  1.00 10.92           C
ATOM   2726  OH  TYR A 438     13.167  -8.988  22.229  1.00 10.89           O
ATOM   2727  N   PHE A 439      7.099  -9.312  26.821  1.00 12.19           N
ATOM   2728  CA  PHE A 439      6.710  -8.006  27.329  1.00 10.75           C
ATOM   2729  C   PHE A 439      7.365  -7.791  28.685  1.00 12.57           C
ATOM   2730  O   PHE A 439      7.995  -6.774  28.939  1.00 12.06           O
ATOM   2731  CB  PHE A 439      5.174  -7.920  27.453  1.00 11.52           C
ATOM   2732  CG  PHE A 439      4.700  -6.632  28.050  1.00 14.98           C
ATOM   2733  CD1 PHE A 439      4.668  -5.480  27.283  1.00 12.52           C
ATOM   2734  CD2 PHE A 439      4.299  -6.571  29.382  1.00 15.07           C
ATOM   2735  CE1 PHE A 439      4.238  -4.270  27.792  1.00 10.83           C
ATOM   2736  CE2 PHE A 439      3.875  -5.360  29.902  1.00 15.85           C
ATOM   2737  CZ  PHE A 439      3.837  -4.225  29.120  1.00 17.96           C
ATOM   2738  N   ILE A 440      7.270  -8.800  29.564  1.00 13.60           N
ATOM   2739  CA  ILE A 440      7.880  -8.684  30.899  1.00 15.56           C
ATOM   2740  C   ILE A 440      9.379  -8.474  30.838  1.00 13.18           C
ATOM   2741  O   ILE A 440      9.933  -7.613  31.536  1.00 12.86           O
ATOM   2742  CB  ILE A 440      7.449  -9.889  31.753  1.00 17.52           C
ATOM   2743  CG1 ILE A 440      5.941  -9.728  32.037  1.00 20.09           C
ATOM   2744  CG2 ILE A 440      8.219  -9.975  33.064  1.00 21.38           C
ATOM   2745  CD1 ILE A 440      5.229 -11.002  32.413  1.00 26.81           C
ATOM   2746  N   GLN A 441     10.054  -9.168  29.935  1.00 15.58           N
ATOM   2747  CA  GLN A 441     11.500  -9.003  29.745  1.00 13.59           C
ATOM   2748  C   GLN A 441     11.819  -7.557  29.395  1.00 14.18           C
ATOM   2749  O   GLN A 441     12.640  -6.877  30.021  1.00 12.66           O
ATOM   2750  CB  GLN A 441     11.964  -9.943  28.630  1.00 14.14           C
ATOM   2751  CG  GLN A 441     13.398  -9.670  28.184  1.00 15.65           C
ATOM   2752  CD  GLN A 441     13.776 -10.439  26.941  1.00 14.60           C
ATOM   2753  OE1 GLN A 441     13.805 -11.662  26.927  1.00 14.87           O
ATOM   2754  NE2 GLN A 441     14.084  -9.731  25.857  1.00 16.49           N
ATOM   2755  N   LEU A 442     11.139  -7.043  28.368  1.00 14.07           N
ATOM   2756  CA  LEU A 442     11.309  -5.656  27.952  1.00 13.76           C
ATOM   2757  C   LEU A 442     11.091  -4.676  29.090  1.00 12.15           C
ATOM   2758  O   LEU A 442     11.770  -3.669  29.233  1.00 12.54           O
ATOM   2759  CB  LEU A 442     10.287  -5.340  26.835  1.00 12.65           C
ATOM   2760  CG  LEU A 442     10.619  -5.944  25.466  1.00 11.47           C
ATOM   2761  CD1 LEU A 442      9.473  -5.788  24.482  1.00  9.63           C
ATOM   2762  CD2 LEU A 442     11.882  -5.315  24.863  1.00 13.55           C
ATOM   2763  N   LEU A 443     10.044  -4.896  29.862  1.00 14.68           N
ATOM   2764  CA  LEU A 443      9.700  -4.061  31.011  1.00 16.59           C
ATOM   2765  C   LEU A 443     10.769  -4.104  32.090  1.00 17.12           C
ATOM   2766  O   LEU A 443     11.197  -3.063  32.607  1.00 15.83           O
ATOM   2767  CB  LEU A 443      8.369  -4.585  31.559  1.00 19.47           C
ATOM   2768  CG  LEU A 443      7.559  -3.671  32.463  1.00 25.52           C
ATOM   2769  CD1 LEU A 443      7.216  -2.382  31.733  1.00 24.26           C
ATOM   2770  CD2 LEU A 443      6.312  -4.407  32.951  1.00 21.92           C
ATOM   2771  N   ARG A 444     11.275  -5.295  32.414  1.00 17.80           N
ATOM   2772  CA  ARG A 444     12.342  -5.386  33.411  1.00 20.45           C
ATOM   2773  C   ARG A 444     13.620  -4.717  32.931  1.00 20.40           C
ATOM   2774  O   ARG A 444     14.287  -4.023  33.701  1.00 20.97           O
ATOM   2775  CB  ARG A 444     12.601  -6.854  33.790  1.00 25.22           C
ATOM   2776  CG  ARG A 444     11.356  -7.405  34.478  1.00 32.03           C
ATOM   2777  CD  ARG A 444     11.655  -8.431  35.541  1.00 37.10           C
ATOM   2778  NE  ARG A 444     11.534  -9.784  35.020  1.00 41.19           N
ATOM   2779  CZ  ARG A 444     10.917 -10.767  35.666  1.00 44.17           C
ATOM   2780  NH1 ARG A 444     10.357 -10.560  36.852  1.00 44.37           N
ATOM   2781  NH2 ARG A 444     10.861 -11.969  35.100  1.00 45.89           N
ATOM   2782  N   ASN A 445     13.941  -4.846  31.641  1.00 16.93           N
ATOM   2783  CA  ASN A 445     15.161  -4.244  31.113  1.00 16.96           C
ATOM   2784  C   ASN A 445     14.980  -2.840  30.568  1.00 15.44           C
ATOM   2785  O   ASN A 445     15.878  -2.345  29.884  1.00 13.79           O
ATOM   2786  CB  ASN A 445     15.707  -5.162  30.014  1.00 18.47           C
ATOM   2787  CG  ASN A 445     16.137  -6.538  30.488  1.00 18.89           C
ATOM   2788  OD1 ASN A 445     16.055  -7.537  29.770  1.00 17.39           O
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ATOM   2789  ND2 ASN A 445      16.647  -6.588  31.708  1.00 18.02           N
ATOM   2790  N   ALA A 446      13.878  -2.159  30.845  1.00 15.51           N
ATOM   2791  CA  ALA A 446      13.648  -0.829  30.296  1.00 15.51           C
ATOM   2792  C   ALA A 446      14.752   0.154  30.621  1.00 17.57           C
ATOM   2793  O   ALA A 446      15.188   0.268  31.771  1.00 16.35           O
ATOM   2794  CB  ALA A 446      12.303  -0.293  30.787  1.00 14.81           C
ATOM   2795  N   ASN A 447      15.126   0.981  29.647  1.00 16.64           N
ATOM   2796  CA  ASN A 447      16.098   2.052  29.902  1.00 16.00           C
ATOM   2797  C   ASN A 447      15.844   3.208  28.950  1.00 17.83           C
ATOM   2798  O   ASN A 447      16.012   3.038  27.732  1.00 18.83           O
ATOM   2799  CB  ASN A 447      17.522   1.518  29.728  1.00 17.65           C
ATOM   2800  CG  ASN A 447      18.566   2.597  29.929  1.00 23.38           C
ATOM   2801  OD1 ASN A 447      18.419   3.452  30.797  1.00 22.77           O
ATOM   2802  ND2 ASN A 447      19.650   2.601  29.162  1.00 24.43           N
ATOM   2803  N   PRO A 448      15.540   4.380  29.478  1.00 18.20           N
ATOM   2804  CA  PRO A 448      15.366   4.620  30.890  1.00 17.16           C
ATOM   2805  C   PRO A 448      14.176   3.878  31.473  1.00 18.21           C
ATOM   2806  O   PRO A 448      13.243   3.420  30.799  1.00 16.91           O
ATOM   2807  CB  PRO A 448      15.154   6.119  31.013  1.00 19.04           C
ATOM   2808  CG  PRO A 448      14.668   6.558  29.674  1.00 20.73           C
ATOM   2809  CD  PRO A 448      15.292   5.619  28.686  1.00 20.31           C
ATOM   2810  N   PRO A 449      14.220   3.677  32.782  1.00 18.86           N
ATOM   2811  CA  PRO A 449      13.201   2.918  33.477  1.00 19.10           C
ATOM   2812  C   PRO A 449      11.848   3.614  33.430  1.00 20.78           C
ATOM   2813  O   PRO A 449      11.788   4.827  33.243  1.00 20.62           O
ATOM   2814  CB  PRO A 449      13.712   2.856  34.914  1.00 20.85           C
ATOM   2815  CG  PRO A 449      15.155   3.208  34.851  1.00 21.46           C
ATOM   2816  CD  PRO A 449      15.289   4.170  33.697  1.00 19.58           C
ATOM   2817  N   PHE A 450      10.782   2.854  33.601  1.00 21.46           N
ATOM   2818  CA  PHE A 450       9.438   3.389  33.709  1.00 28.61           C
ATOM   2819  C   PHE A 450       9.072   3.431  35.204  1.00 33.92           C
ATOM   2820  O   PHE A 450       8.942   4.534  35.775  1.00 36.20           O
ATOM   2821  CB  PHE A 450       8.401   2.527  32.994  1.00 27.81           C
ATOM   2822  CG  PHE A 450       8.420   2.651  31.498  1.00 25.37           C
ATOM   2823  CD1 PHE A 450       7.693   3.645  30.865  1.00 24.79           C
ATOM   2824  CD2 PHE A 450       9.145   1.756  30.730  1.00 26.22           C
ATOM   2825  CE1 PHE A 450       7.696   3.765  29.488  1.00 24.38           C
ATOM   2826  CE2 PHE A 450       9.152   1.871  29.352  1.00 26.70           C
ATOM   2827  CZ  PHE A 450       8.427   2.870  28.731  1.00 26.67           C
ATOM   2828  OXT PHE A 450       9.364   2.398  35.866  1.00 39.79           O
ATOM   2829 MG   IUM A 500      28.946  14.438  16.660  1.00 33.17          MG
ATOM   2831  C1  MAN A 600       5.668 -11.308  42.166  1.00 49.14           C
ATOM   2832  C2  MAN A 600       7.120 -11.237  41.573  1.00 49.77           C
ATOM   2833  O2  MAN A 600       8.041 -11.026  42.620  1.00 50.50           O
ATOM   2834  C3  MAN A 600       7.409 -12.514  40.808  1.00 50.61           C
ATOM   2835  O3  MAN A 600       8.746 -12.457  40.289  1.00 52.29           O
ATOM   2836  C4  MAN A 600       7.214 -13.771  41.606  1.00 49.83           C
ATOM   2837  O4  MAN A 600       7.152 -14.888  40.732  1.00 49.25           O
ATOM   2838  C5  MAN A 600       5.938 -13.737  42.478  1.00 49.49           C
ATOM   2839  C6  MAN A 600       6.030 -14.691  43.660  1.00 48.90           C
ATOM   2840  O6  MAN A 600       7.004 -14.235  44.570  1.00 49.55           O
ATOM   2841  O5  MAN A 600       5.598 -12.455  42.966  1.00 48.82           O
ATOM   2842  C1  MAN A 650      -1.019   0.389  36.281  1.00 33.59           C
ATOM   2843  C2  MAN A 650      -1.735  -0.910  36.785  1.00 35.19           C
ATOM   2844  O2  MAN A 650      -1.810  -0.926  38.207  1.00 35.56           O
ATOM   2845  C3  MAN A 650      -3.139  -0.988  36.208  1.00 36.76           C
ATOM   2846  O3  MAN A 650      -3.775  -2.175  36.706  1.00 37.15           O
ATOM   2847  C4  MAN A 650      -3.976   0.239  36.472  1.00 38.33           C
ATOM   2848  O4  MAN A 650      -5.154   0.218  35.687  1.00 40.01           O
ATOM   2849  C5  MAN A 650      -3.171   1.500  36.088  1.00 38.36           C
ATOM   2850  C6  MAN A 650      -3.775   2.831  36.470  1.00 39.68           C
ATOM   2851  O6  MAN A 650      -3.054   3.827  35.766  1.00 42.08           O
ATOM   2852  O5  MAN A 650      -1.856   1.461  36.634  1.00 35.94           O
ATOM   2853  C1  NAG A 800      -8.073  -6.145  -0.318  1.00  9.79           C
ATOM   2854  C2  NAG A 800      -8.690  -7.157  -1.282  1.00 10.36           C
ATOM   2855  N2  NAG A 800      -7.691  -7.663  -2.243  1.00 10.16           N
ATOM   2856  C7  NAG A 800      -7.477  -8.997  -2.458  1.00 13.26           C
ATOM   2857  O7  NAG A 800      -8.065  -9.803  -1.898  1.00 14.95           O
ATOM   2858  C8  NAG A 800      -6.428  -9.300  -3.464  1.00 11.06           C
ATOM   2859  C3  NAG A 800      -9.811  -6.520  -2.083  1.00 11.55           C
ATOM   2860  O3  NAG A 800     -10.512  -7.519  -2.816  1.00 11.95           O
ATOM   2861  C4  NAG A 800     -10.844  -5.826  -1.139  1.00 11.32           C
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ATOM   2862  O4  NAG A 800     -11.756  -5.115  -1.996  1.00 11.09           O
ATOM   2863  C5  NAG A 800     -10.060  -4.839  -0.256  1.00  9.16           C
ATOM   2864  O5  NAG A 800      -9.147  -5.613   0.503  1.00  7.61           O
ATOM   2865  C6  NAG A 800     -10.905  -4.025   0.707  1.00  8.71           C
ATOM   2866  O6  NAG A 800     -10.129  -3.168   1.504  1.00 10.07           O
ATOM   2867  C1  GOL G 700       5.971  -7.474  13.148  1.00 56.20           C
ATOM   2868  O1  GOL G 700       6.763  -8.674  13.072  1.00 56.59           O
ATOM   2869  C2  GOL G 700       4.604  -7.678  12.511  1.00 56.76           C
ATOM   2870  O2  GOL G 700       3.707  -6.678  13.053  1.00 57.19           O
ATOM   2871  C3  GOL G 700       4.726  -7.533  10.989  1.00 55.80           C
ATOM   2872  O3  GOL G 700       3.721  -8.314  10.310  1.00 55.24           O
ATOM   2873  OW0 WAT W   1      -4.468  16.654   2.524  1.00  5.60           O
ATOM   2874  OW0 WAT W   2      -9.324  -4.136   3.963  1.00  6.10           O
ATOM   2875  OW0 WAT W   3      -7.470  -3.307  -2.246  1.00  5.86           O
ATOM   2876  OW0 WAT W   4      12.860   0.177   1.787  1.00  5.96           O
ATOM   2877  OW0 WAT W   5      -5.097  10.396   6.971  1.00  6.32           O
ATOM   2878  OW0 WAT W   6       8.197  -5.100   2.595  1.00  6.05           O
ATOM   2879  OW0 WAT W   7      -0.886 -12.491  -4.926  1.00  7.07           O
ATOM   2880  OW0 WAT W   8      10.318  -7.987 -10.336  1.00  7.50           O
ATOM   2881  OW0 WAT W   9      14.305  -0.911  18.902  1.00  7.40           O
ATOM   2882  OW0 WAT W  10       6.478   5.872  17.995  1.00  7.57           O
ATOM   2883  OW0 WAT W  11       2.423  -9.736   0.365  1.00  7.92           O
ATOM   2884  OW0 WAT W  12       1.030  -0.380  18.240  1.00  8.32           O
ATOM   2885  OW0 WAT W  13      13.819  -1.981   3.118  1.00  8.36           O
ATOM   2886  OW0 WAT W  14      10.400   1.638   1.169  1.00  8.17           O
ATOM   2887  OW0 WAT W  15      -5.766  -9.753   4.360  1.00  8.35           O
ATOM   2888  OW0 WAT W  16       5.966 -14.827  -7.223  1.00  8.55           O
ATOM   2889  OW0 WAT W  17       7.007 -11.847   6.999  1.00  8.79           O
ATOM   2890  OW0 WAT W  18      13.826  -7.905 -10.918  1.00  8.81           O
ATOM   2891  OW0 WAT W  19      14.539  -0.383   9.398  1.00  9.03           O
ATOM   2892  OW0 WAT W  20      -0.933   2.266  23.257  1.00  9.17           O
ATOM   2893  OW0 WAT W  21      12.170  -3.479  17.651  1.00  9.27           O
ATOM   2894  OW0 WAT W  22       0.705 -12.567 -11.769  1.00  9.37           O
ATOM   2895  OW0 WAT W  23      11.229 -17.196  19.443  1.00  9.19           O
ATOM   2896  OW0 WAT W  24      10.620  -1.566  18.573  1.00  9.42           O
ATOM   2897  OW0 WAT W  25      -7.475  -2.684   0.505  1.00  9.78           O
ATOM   2898  OW0 WAT W  26      -8.958  18.273   6.515  1.00  9.87           O
ATOM   2899  OW0 WAT W  27      17.557  -3.737  24.225  1.00 10.25           O
ATOM   2900  OW0 WAT W  28      23.059  -3.505  19.890  1.00 10.29           O
ATOM   2901  OW0 WAT W  29       4.767  16.031   5.354  1.00 10.53           O
ATOM   2902  OW0 WAT W  30       8.485  -1.312  22.058  1.00 10.47           O
ATOM   2903  OW0 WAT W  31       9.567  -7.077   1.426  1.00 10.47           O
ATOM   2904  OW0 WAT W  32       6.081 -15.169  -3.110  1.00 10.80           O
ATOM   2905  OW0 WAT W  33      -6.029  -5.578  -3.194  1.00 10.73           O
ATOM   2906  OW0 WAT W  34      -0.551  -8.403 -11.160  1.00 10.64           O
ATOM   2907  OW0 WAT W  35      21.193  -4.885  18.347  1.00 10.94           O
ATOM   2908  OW0 WAT W  36      16.703 -14.576  15.763  1.00 10.99           O
ATOM   2909  OW0 WAT W  37      27.431   6.691  19.167  1.00 11.25           O
ATOM   2910  OW0 WAT W  38      17.711  12.202  -5.183  1.00 11.51           O
ATOM   2911  OW0 WAT W  39      -3.425  15.550  13.219  1.00 11.38           O
ATOM   2912  OW0 WAT W  40       1.926  -9.415 -10.379  1.00 11.20           O
ATOM   2913  OW0 WAT W  41      10.725 -12.796  -6.900  1.00 11.29           O
ATOM   2914  OW0 WAT W  42       4.586 -12.320  -0.004  1.00 11.22           O
ATOM   2915  OW0 WAT W  43      31.723  -3.146  16.036  1.00 11.36           O
ATOM   2916  OW0 WAT W  44      -2.405  -2.392  16.337  1.00 11.79           O
ATOM   2917  OW0 WAT W  45       9.550  -0.217  -0.443  1.00 11.72           O
ATOM   2918  OW0 WAT W  46       7.087 -13.703  -0.019  1.00 12.00           O
ATOM   2919  OW0 WAT W  47       1.840  16.199  -0.689  1.00 12.05           O
ATOM   2920  OW0 WAT W  48       8.160  -7.933  20.936  1.00 11.91           O
ATOM   2921  OW0 WAT W  49      -7.538  19.875   9.498  1.00 12.29           O
ATOM   2922  OW0 WAT W  50       9.058 -10.668  20.774  1.00 11.78           O
ATOM   2923  OW0 WAT W  51      16.826   3.308  23.487  1.00 12.38           O
ATOM   2924  OW0 WAT W  52      -0.582  -2.790  18.365  1.00 12.92           O
ATOM   2925  OW0 WAT W  53       1.832  19.649   3.061  1.00 12.83           O
ATOM   2926  OW0 WAT W  54      12.706  -8.455  14.301  1.00 12.82           O
ATOM   2927  OW0 WAT W  55     -11.536   9.535  -0.312  1.00 13.19           O
ATOM   2928  OW0 WAT W  56      -6.032  15.160   0.690  1.00 13.88           O
ATOM   2929  OW0 WAT W  57      19.162  -5.707  15.994  1.00 14.13           O
ATOM   2930  OW0 WAT W  58      -1.239   4.561  14.826  1.00 14.56           O
ATOM   2931  OW0 WAT W  59       8.708 -18.310  13.262  1.00 14.09           O
ATOM   2932  OW0 WAT W  60      17.937   3.773  25.959  1.00 13.94           O
ATOM   2933  OW0 WAT W  61       5.763   2.778 -10.531  1.00 14.20           O
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ATOM   2934  OW0 WAT W  62       4.818  16.514  -4.288  1.00 14.46           O
ATOM   2935  OW0 WAT W  63      15.604  -2.866  10.842  1.00 14.30           O
ATOM   2936  OW0 WAT W  64      31.308   4.387   6.863  1.00 14.65           O
ATOM   2937  OW0 WAT W  65      10.455  15.524  -0.294  1.00 14.43           O
ATOM   2938  OW0 WAT W  66       3.496   1.048  22.599  1.00 14.74           O
ATOM   2939  OW0 WAT W  67      -8.496  -0.107  -4.629  1.00 14.14           O
ATOM   2940  OW0 WAT W  68     -11.241   8.767  20.443  1.00 14.78           O
ATOM   2941  OW0 WAT W  69      -1.634  -4.976  12.452  1.00 14.74           O
ATOM   2942  OW0 WAT W  70      17.087 -13.910  18.326  1.00 14.95           O
ATOM   2943  OW0 WAT W  71      -0.612  -3.043  14.265  1.00 15.69           O
ATOM   2944  OW0 WAT W  72     -13.481  -4.288   3.399  1.00 15.73           O
ATOM   2945  OW0 WAT W  73       5.936  13.080  -7.676  1.00 15.27           O
ATOM   2946  OW0 WAT W  74       0.494   2.739  20.969  1.00 15.30           O
ATOM   2947  OW0 WAT W  75      23.631  -1.239  18.248  1.00 15.65           O
ATOM   2948  OW0 WAT W  76      13.244   8.375  26.887  1.00 15.66           O
ATOM   2949  OW0 WAT W  77      30.009   2.397   0.481  1.00 15.32           O
ATOM   2950  OW0 WAT W  78      14.697 -24.524  18.449  1.00 16.10           O
ATOM   2951  OW0 WAT W  79       9.865 -14.692   0.881  1.00 15.61           O
ATOM   2952  OW0 WAT W  80      -6.700   3.255  18.580  1.00 15.95           O
ATOM   2953  OW0 WAT W  81       0.226 -10.358   4.396  1.00 16.43           O
ATOM   2954  OW0 WAT W  82     -14.277  -3.237   7.387  1.00 16.55           O
ATOM   2955  OW0 WAT W  83     -14.273  10.136  14.220  1.00 16.35           O
ATOM   2956  OW0 WAT W  84      16.995 -22.459  14.478  1.00 16.89           O
ATOM   2957  OW0 WAT W  85       8.800 -18.470  -1.262  1.00 16.06           O
ATOM   2958  OW0 WAT W  86      -9.771  -2.396  -3.663  1.00 16.79           O
ATOM   2959  OW0 WAT W  87      31.994  -3.122   5.019  1.00 16.44           O
ATOM   2960  OW0 WAT W  88      -5.716 -11.410  -0.377  1.00 17.08           O
ATOM   2961  OW0 WAT W  89      -7.576  -6.091  -5.437  1.00 16.49           O
ATOM   2962  OW0 WAT W  90      -8.105   0.245  -7.257  1.00 16.85           O
ATOM   2963  OW0 WAT W  91       1.936 -21.294  11.415  1.00 17.49           O
ATOM   2964  OW0 WAT W  92      26.647  15.826   1.455  1.00 17.25           O
ATOM   2965  OW0 WAT W  93      12.689   9.940  24.738  1.00 17.13           O
ATOM   2966  OW0 WAT W  94     -13.521  -5.945   7.221  1.00 17.80           O
ATOM   2967  OW0 WAT W  95       8.448  15.744   3.637  1.00 17.75           O
ATOM   2968  OW0 WAT W  96      -8.192  15.467  13.488  1.00 17.91           O
ATOM   2969  OW0 WAT W  97       3.604  -6.629  15.807  1.00 17.79           O
ATOM   2970  OW0 WAT W  98       0.291   6.882  16.524  1.00 18.12           O
ATOM   2971  OW0 WAT W  99      15.287 -17.536  -3.539  1.00 17.85           O
ATOM   2972  OW0 WAT W 100      14.184 -10.300   3.235  1.00 18.33           O
ATOM   2973  OW0 WAT W 101      -2.364   2.671  30.993  1.00 17.88           O
ATOM   2974  OW0 WAT W 102       3.745  -8.895 -12.356  1.00 18.47           O
ATOM   2975  OW0 WAT W 103      -6.245  -7.090  -7.683  1.00 18.81           O
ATOM   2976  OW0 WAT W 104       1.436 -14.284  25.817  1.00 18.52           O
ATOM   2977  OW0 WAT W 105      12.268  -4.305   9.772  1.00 18.81           O
ATOM   2978  OW0 WAT W 106      -0.224 -18.011  18.615  1.00 19.25           O
ATOM   2979  OW0 WAT W 107     -11.552  -5.720   4.596  1.00 19.42           O
ATOM   2980  OW0 WAT W 108      14.435 -15.325   7.825  1.00 19.06           O
ATOM   2981  OW0 WAT W 109       5.457  14.376  18.532  1.00 19.25           O
ATOM   2982  OW0 WAT W 110      33.159  -5.641   1.172  1.00 19.33           O
ATOM   2983  OW0 WAT W 111      21.488  -7.744  27.377  1.00 18.85           O
ATOM   2984  OW0 WAT W 112      -0.732  12.133  -4.438  1.00 20.00           O
ATOM   2985  OW0 WAT W 113      -0.539   4.054  17.863  1.00 19.83           O
ATOM   2986  OW0 WAT W 114      -7.316   5.876  -4.772  1.00 19.57           O
ATOM   2987  OW0 WAT W 115      10.104  -8.684  13.464  1.00 19.36           O
ATOM   2988  OW0 WAT W 116      -6.373 -10.853  -7.428  1.00 19.77           O
ATOM   2989  OW0 WAT W 117      23.367  12.977  18.804  1.00 20.58           O
ATOM   2990  OW0 WAT W 118       4.173  10.724  23.922  1.00 20.44           O
ATOM   2991  OW0 WAT W 119       4.605 -16.994  13.371  1.00 19.72           O
ATOM   2992  OW0 WAT W 120     -13.086  -1.205   0.262  1.00 19.75           O
ATOM   2993  OW0 WAT W 121      22.657  -7.291  -3.700  1.00 20.26           O
ATOM   2994  OW0 WAT W 122      29.490   7.752  11.469  1.00 20.15           O
ATOM   2995  OW0 WAT W 123       6.233  20.091   3.312  1.00 20.58           O
ATOM   2996  OW0 WAT W 124      16.002  -4.377   8.845  1.00 19.99           O
ATOM   2997  OW0 WAT W 125     -14.036   6.248  16.420  1.00 20.32           O
ATOM   2998  OW0 WAT W 126      24.954 -10.530  23.514  1.00 20.20           O
ATOM   2999  OW0 WAT W 127      -5.026  -3.016  -9.151  1.00 19.86           O
ATOM   3000  OW0 WAT W 128      22.890  17.427  15.518  1.00 20.21           O
ATOM   3001  OW0 WAT W 129       7.124 -16.580   8.309  1.00 21.04           O
ATOM   3002  OW0 WAT W 130     -11.004  -2.388  13.243  1.00 20.24           O
ATOM   3003  OW0 WAT W 131       3.527   8.031  26.930  1.00 20.59           O
ATOM   3004  OW0 WAT W 132      -2.513 -12.076  20.838  1.00 21.55           O
ATOM   3005  OW0 WAT W 133     -13.855  10.661   6.699  1.00 20.52           O
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ATOM   3006  OW0 WAT W 134       6.324   9.299  23.766  1.00 21.47           O
ATOM   3007  OW0 WAT W 135      13.982  17.723  12.601  1.00 21.83           O
ATOM   3008  OW0 WAT W 136       7.589  -2.515  44.700  1.00 21.84           O
ATOM   3009  OW0 WAT W 137      18.823  -8.635  13.064  1.00 21.59           O
ATOM   3010  OW0 WAT W 138       7.675 -18.108   2.858  1.00 21.94           O
ATOM   3011  OW0 WAT W 139      10.142 -13.484  -9.453  1.00 22.79           O
ATOM   3012  OW0 WAT W 140      -8.748  -4.033  13.606  1.00 22.15           O
ATOM   3013  OW0 WAT W 141      28.299   8.450  16.957  1.00 23.12           O
ATOM   3014  OW0 WAT W 142      -0.123   8.590  25.377  1.00 22.65           O
ATOM   3015  OW0 WAT W 143       4.305   5.196 -10.573  1.00 22.59           O
ATOM   3016  OW0 WAT W 144       3.216  18.707  -3.341  1.00 23.01           O
ATOM   3017  OW0 WAT W 145      23.235  -8.140  10.628  1.00 22.81           O
ATOM   3018  OW0 WAT W 146      22.644  -9.297   3.639  1.00 23.06           O
ATOM   3019  OW0 WAT W 147       8.467  11.734  24.878  1.00 22.90           O
ATOM   3020  OW0 WAT W 148      26.741  14.179  16.573  1.00 23.03           O
ATOM   3021  OW0 WAT W 149      29.370  12.527  16.019  1.00 23.20           O
ATOM   3022  OW0 WAT W 150      -2.593   8.779  22.944  1.00 23.78           O
ATOM   3023  OW0 WAT W 151     -13.042  11.744   0.631  1.00 23.23           O
ATOM   3024  OW0 WAT W 152       3.415  21.470  13.104  1.00 23.05           O
ATOM   3025  OW0 WAT W 153       6.048   8.207  26.173  1.00 22.63           O
ATOM   3026  OW0 WAT W 154      24.730 -11.926  11.981  1.00 23.13           O
ATOM   3027  OW0 WAT W 155      11.681 -16.410  -7.159  1.00 23.40           O
ATOM   3028  OW0 WAT W 156      31.087  14.581  17.102  1.00 23.88           O
ATOM   3029  OW0 WAT W 157      -7.485  -9.642   1.513  1.00 23.54           O
ATOM   3030  OW0 WAT W 158      22.874   0.702  -5.440  1.00 23.80           O
ATOM   3031  OW0 WAT W 159      -5.044  15.418  -2.039  1.00 23.87           O
ATOM   3032  OW0 WAT W 160      33.616   3.503  14.918  1.00 24.08           O
ATOM   3033  OW0 WAT W 161     -10.872  15.052   4.563  1.00 24.14           O
ATOM   3034  OW0 WAT W 162      -4.606 -13.215   2.312  1.00 24.40           O
ATOM   3035  OW0 WAT W 163      27.070  17.927  -2.306  1.00 23.99           O
ATOM   3036  OW0 WAT W 164       9.893  -5.746  10.263  1.00 24.76           O
ATOM   3037  OW0 WAT W 165      17.078   3.189  -7.107  1.00 24.03           O
ATOM   3038  OW0 WAT W 166     -15.062  14.379  19.475  1.00 24.70           O
ATOM   3039  OW0 WAT W 167      22.032  -0.623  28.407  1.00 24.25           O
ATOM   3040  OW0 WAT W 168      12.181 -23.786  18.858  1.00 24.75           O
ATOM   3041  OW0 WAT W 169      -0.705 -14.765  22.543  1.00 24.49           O
ATOM   3042  OW0 WAT W 170      28.955   8.903  14.322  1.00 24.45           O
ATOM   3043  OW0 WAT W 171       3.695  12.616  -6.193  1.00 24.55           O
ATOM   3044  OW0 WAT W 172      19.538 -12.070   9.591  1.00 24.48           O
ATOM   3045  OW0 WAT W 173      14.310  14.805  24.317  1.00 24.67           O
ATOM   3046  OW0 WAT W 174      29.093  11.564  -1.788  1.00 25.43           O
ATOM   3047  OW0 WAT W 175       3.832   6.619  29.580  1.00 24.64           O
ATOM   3048  OW0 WAT W 176      -4.607 -13.078  -5.569  1.00 25.32           O
ATOM   3049  OW0 WAT W 177       2.173 -10.201   8.127  1.00 25.57           O
ATOM   3050  OW0 WAT W 178       4.802 -21.672  20.497  1.00 25.35           O
ATOM   3051  OW0 WAT W 179      -5.652  -2.528  34.399  1.00 24.99           O
ATOM   3052  OW0 WAT W 180       4.922 -18.387   6.576  1.00 25.41           O
ATOM   3053  OW0 WAT W 181      19.039  18.090   8.296  1.00 24.90           O
ATOM   3054  OW0 WAT W 182      14.030 -16.520  -0.839  1.00 25.24           O
ATOM   3055  OW0 WAT W 183      13.952 -13.251  29.217  1.00 24.95           O
ATOM   3056  OW0 WAT W 184      13.863  -3.287   7.648  1.00 25.30           O
ATOM   3057  OW0 WAT W 185      12.660  14.016  -9.979  1.00 26.21           O
ATOM   3058  OW0 WAT W 186      12.317   9.016  29.374  1.00 25.87           O
ATOM   3059  OW0 WAT W 187      16.730 -11.987  28.683  1.00 26.21           O
ATOM   3060  OW0 WAT W 188      12.915   7.477  33.524  1.00 25.68           O
ATOM   3061  OW0 WAT W 189      20.307  19.532   0.156  1.00 26.22           O
ATOM   3062  OW0 WAT W 190      -4.141  -5.926  13.308  1.00 26.52           O
ATOM   3063  OW0 WAT W 191       3.650 -16.192   3.024  1.00 26.09           O
ATOM   3064  OW0 WAT W 192      18.931  -8.114  10.486  1.00 25.84           O
ATOM   3065  OW0 WAT W 193       6.544 -16.595  11.718  1.00 26.72           O
ATOM   3066  OW0 WAT W 194      -9.642  -4.382  -5.721  1.00 26.51           O
ATOM   3067  OW0 WAT W 195      25.077  18.264   7.448  1.00 27.66           O
ATOM   3068  OW0 WAT W 196      22.062 -10.277  28.364  1.00 26.91           O
ATOM   3069  OW0 WAT W 197      21.527   7.834  -6.777  1.00 27.25           O
ATOM   3070  OW0 WAT W 198     -15.429   6.005  10.514  1.00 26.27           O
ATOM   3071  OW0 WAT W 199      21.193 -21.187  18.252  1.00 26.89           O
ATOM   3072  OW0 WAT W 200      19.949 -14.230  -7.811  1.00 26.83           O
ATOM   3073  OW0 WAT W 201      27.179   3.904  26.254  1.00 27.22           O
ATOM   3074  OW0 WAT W 202      28.930  13.425  18.572  1.00 26.37           O
ATOM   3075  OW0 WAT W 203      25.676  -3.621  -3.154  1.00 26.88           O
ATOM   3076  OW0 WAT W 204      -3.469  -3.163  39.209  1.00 27.42           O
ATOM   3077  OW0 WAT W 205      -6.999  18.655  15.387  1.00 27.04           O
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ATOM   3078  OW0 WAT W 206      -9.951   2.021  -4.039  1.00 27.29           O
ATOM   3079  OW0 WAT W 207      16.128  17.390  14.219  1.00 27.01           O
ATOM   3080  OW0 WAT W 208       5.742  20.405  11.966  1.00 27.24           O
ATOM   3081  OW0 WAT W 209       3.407 -14.359  31.337  1.00 26.97           O
ATOM   3082  OW0 WAT W 210      13.943  16.430  15.607  1.00 26.52           O
ATOM   3083  OW0 WAT W 211       1.033 -24.205  11.563  1.00 26.74           O
ATOM   3084  OW0 WAT W 212       8.538  -6.820  12.252  1.00 27.10           O
ATOM   3085  OW0 WAT W 213      26.428  -6.873   4.061  1.00 28.64           O
ATOM   3086  OW0 WAT W 214      12.793 -21.553   8.586  1.00 27.33           O
ATOM   3087  OW0 WAT W 215       1.409  -1.041  41.300  1.00 27.91           O
ATOM   3088  OW0 WAT W 216      16.429 -18.470  25.150  1.00 28.26           O
ATOM   3089  OW0 WAT W 217      23.448  -5.569  28.728  1.00 27.68           O
ATOM   3090  OW0 WAT W 218       3.804  12.359  21.721  1.00 27.98           O
ATOM   3091  OW0 WAT W 219      12.182 -21.534  27.485  1.00 28.34           O
ATOM   3092  OW0 WAT W 220      -2.839  14.075  -5.590  1.00 29.01           O
ATOM   3093  OW0 WAT W 221       6.291  -7.332 -11.913  1.00 27.59           O
ATOM   3094  OW0 WAT W 222      27.232 -10.868  14.704  1.00 27.74           O
ATOM   3095  OW0 WAT W 223      22.832 -12.419   1.056  1.00 28.27           O
ATOM   3096  OW0 WAT W 224      24.905  16.204  16.657  1.00 27.46           O
ATOM   3097  OW0 WAT W 225       6.998 -16.116   1.072  1.00 28.54           O
ATOM   3098  OW0 WAT W 226       8.341 -14.756  11.628  1.00 28.02           O
ATOM   3099  OW0 WAT W 227      31.699   8.814   7.083  1.00 28.53           O
ATOM   3100  OW0 WAT W 228       1.326  12.873  24.228  1.00 28.34           O
ATOM   3101  OW0 WAT W 229      26.343  10.267  21.240  1.00 28.97           O
ATOM   3102  OW0 WAT W 230      -8.226   8.444  -4.190  1.00 28.02           O
ATOM   3103  OW0 WAT W 231       1.037  10.354  23.234  1.00 27.68           O
ATOM   3104  OW0 WAT W 232      31.351   9.070  15.681  1.00 28.94           O
ATOM   3105  OW0 WAT W 233       9.961 -13.191  30.741  1.00 28.63           O
ATOM   3106  OW0 WAT W 234      -1.017 -12.518  14.553  1.00 29.46           O
ATOM   3107  OW0 WAT W 235       7.281  16.086   5.949  1.00 28.91           O
ATOM   3108  OW0 WAT W 236      12.010  -1.097 -12.003  1.00 29.09           O
ATOM   3109  OW0 WAT W 237     -14.446   0.903  -0.623  1.00 28.57           O
ATOM   3110  OW0 WAT W 238      20.658 -12.467  27.357  1.00 28.27           O
ATOM   3111  OW0 WAT W 239      29.938   9.464   5.006  1.00 28.75           O
ATOM   3112  OW0 WAT W 240      14.494  -1.249  33.932  1.00 28.76           O
ATOM   3113  OW0 WAT W 241      -6.225  20.349  11.888  1.00 28.93           O
ATOM   3114  OW0 WAT W 242      -4.947 -14.577  -8.496  1.00 30.30           O
ATOM   3115  OW0 WAT W 243      20.235  17.364  -1.556  1.00 30.70           O
ATOM   3116  OW0 WAT W 244      -1.673  -9.217  19.036  1.00 30.74           O
ATOM   3117  OW0 WAT W 245      10.607  17.610   3.903  1.00 29.81           O
ATOM   3118  OW0 WAT W 246      18.328  -2.427  30.996  1.00 29.71           O
ATOM   3119  OW0 WAT W 247      15.186  10.698  24.086  1.00 30.00           O
ATOM   3120  OW0 WAT W 248      25.589 -12.660  25.077  1.00 29.38           O
ATOM   3121  OW0 WAT W 249       5.811 -10.320  38.194  1.00 29.86           O
ATOM   3122  OW0 WAT W 250      -9.482  14.737  23.332  1.00 29.60           O
ATOM   3123  OW0 WAT W 251      -9.452  -8.084  -5.246  1.00 29.57           O
ATOM   3124  OW0 WAT W 252      27.981  -2.018  24.047  1.00 29.85           O
ATOM   3125  OW0 WAT W 253       9.480 -14.704   9.232  1.00 29.91           O
ATOM   3126  OW0 WAT W 254      29.170  15.410  15.105  1.00 30.52           O
ATOM   3127  OW0 WAT W 255      -1.073  20.472  15.287  1.00 30.04           O
ATOM   3128  OW0 WAT W 256      25.041  16.369   4.043  1.00 30.10           O
ATOM   3129  OW0 WAT W 257       8.526 -10.719  12.264  1.00 30.73           O
ATOM   3130  OW0 WAT W 258     -11.777  -9.547  -1.114  1.00 30.39           O
ATOM   3131  OW0 WAT W 259      15.217 -24.589  13.732  1.00 31.76           O
ATOM   3132  OW0 WAT W 260     -10.571  15.562  -1.155  1.00 31.49           O
ATOM   3133  OW0 WAT W 261      24.233 -10.206  -3.316  1.00 30.98           O
ATOM   3134  OW0 WAT W 262      22.801 -14.479  24.909  1.00 32.54           O
ATOM   3135  OW0 WAT W 263       0.353  -5.061  15.605  1.00 32.91           O
ATOM   3136  OW0 WAT W 264       0.183  -9.444  12.256  1.00 32.18           O
ATOM   3137  OW0 WAT W 265      -9.240   4.480  -6.104  1.00 32.08           O
ATOM   3138  OW0 WAT W 266      22.177 -16.298   0.412  1.00 31.68           O
ATOM   3139  OW0 WAT W 267      20.544  -0.803  30.714  1.00 31.12           O
ATOM   3140  OW0 WAT W 268     -13.097  -2.924  16.924  1.00 32.23           O
ATOM   3141  OW0 WAT W 269      -2.339  21.164  17.490  1.00 33.07           O
ATOM   3142  OW0 WAT W 270      14.787 -12.634   7.535  1.00 31.57           O
ATOM   3143  OW0 WAT W 271      19.163 -23.079  12.690  1.00 32.33           O
ATOM   3144  OW0 WAT W 272      26.398  16.860  -4.892  1.00 31.30           O
ATOM   3145  OW0 WAT W 273      -1.037 -13.317  26.276  1.00 32.40           O
ATOM   3146  OW0 WAT W 274      31.761  -9.534   9.316  1.00 31.45           O
ATOM   3147  OW0 WAT W 275     -14.962   6.438   8.019  1.00 32.22           O
ATOM   3148  OW0 WAT W 276      16.902 -22.232  24.082  1.00 32.50           O
ATOM   3149  OW0 WAT W 277      31.999   3.938  -0.687  1.00 32.98           O
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ATOM   3150  OW0 WAT W 278      10.882 -24.863  20.835  1.00 33.00           O
ATOM   3151  OW0 WAT W 279      16.312   8.681  27.021  1.00 32.18           O
ATOM   3152  OW0 WAT W 280      20.408   2.341  23.733  1.00 31.64           O
ATOM   3153  OW0 WAT W 281       3.089 -16.183  24.860  1.00 32.92           O
ATOM   3154  OW0 WAT W 282      12.145  -8.651 -12.952  1.00 33.48           O
ATOM   3155  OW0 WAT W 283      30.869 -10.078  15.970  1.00 32.04           O
ATOM   3156  OW0 WAT W 284      26.112   0.524  27.149  1.00 33.28           O
ATOM   3157  OW0 WAT W 285      32.955   3.269  26.482  1.00 31.92           O
ATOM   3158  OW0 WAT W 286      -4.349  15.468  25.028  1.00 33.76           O
ATOM   3159  OW0 WAT W 287       0.543 -19.994   6.822  1.00 33.30           O
ATOM   3160  OW0 WAT W 288       7.232  18.822   6.235  1.00 33.25           O
ATOM   3161  OW0 WAT W 289      30.793  -0.744  -2.106  1.00 32.41           O
ATOM   3162  OW0 WAT W 290     -14.044   4.412   4.984  1.00 34.64           O
ATOM   3163  OW0 WAT W 291       7.935 -21.433   7.051  1.00 33.93           O
ATOM   3164  OW0 WAT W 292       9.487  17.785   1.224  1.00 33.09           O
ATOM   3165  OW0 WAT W 293     -11.530  17.332  12.202  1.00 32.80           O
ATOM   3166  OW0 WAT W 294      11.972  20.874   7.981  1.00 33.70           O
ATOM   3167  OW0 WAT W 295       2.330   1.272  42.628  1.00 32.68           O
ATOM   3168  OW0 WAT W 296     -17.157  10.127   9.956  1.00 32.92           O
ATOM   3169  OW0 WAT W 297      20.408 -14.578   9.046  1.00 34.48           O
ATOM   3170  OW0 WAT W 298      -5.731  -5.219  34.259  1.00 34.02           O
ATOM   3171  OW0 WAT W 299      28.823  -8.458  13.197  1.00 34.10           O
ATOM   3172  OW0 WAT W 300      18.168  10.098  25.967  1.00 34.11           O
ATOM   3173  OW0 WAT W 301       2.189 -27.221  14.252  1.00 33.96           O
ATOM   3174  OW0 WAT W 302       4.440  18.298  20.498  1.00 33.98           O
ATOM   3175  OW0 WAT W 303      18.342 -18.763  -1.284  1.00 33.67           O
ATOM   3176  OW0 WAT W 304      -4.335  -4.252  15.976  1.00 33.57           O
ATOM   3177  OW0 WAT W 305      -5.704 -11.489   9.366  1.00 34.26           O
ATOM   3178  OW0 WAT W 306       8.129 -11.682 -12.784  1.00 33.48           O
ATOM   3179  OW0 WAT W 307      20.227  10.579  -7.226  1.00 34.37           O
ATOM   3180  OW0 WAT W 308       5.761 -19.412  28.762  1.00 36.02           O
ATOM   3181  OW0 WAT W 309     -13.370   2.801  17.564  1.00 34.60           O
ATOM   3182  OW0 WAT W 310      17.448 -16.784   1.721  1.00 33.97           O
ATOM   3183  OW0 WAT W 311      30.754  11.892   4.112  1.00 33.96           O
ATOM   3184  OW0 WAT W 312       9.298   7.216  31.177  1.00 33.72           O
ATOM   3185  OW0 WAT W 313       3.963   5.346  37.294  1.00 35.91           O
ATOM   3186  OW0 WAT W 314      -0.537  -3.858 -13.509  1.00 35.50           O
ATOM   3187  OW0 WAT W 315      29.546  12.636   1.125  1.00 35.28           O
ATOM   3188  OW0 WAT W 316      16.641 -10.279  30.641  1.00 36.00           O
ATOM   3189  OW0 WAT W 317       3.375   1.212 -11.626  1.00 35.75           O
ATOM   3190  OW0 WAT W 318       4.176 -22.783  27.673  1.00 34.95           O
ATOM   3191  OW0 WAT W 319      -7.882   0.661  24.793  1.00 35.32           O
ATOM   3192  OW0 WAT W 320      -4.779   7.582  23.450  1.00 34.46           O
ATOM   3193  OW0 WAT W 321       4.365 -18.587  24.470  1.00 34.61           O
ATOM   3194  OW0 WAT W 322       1.204  12.181  -7.096  1.00 36.26           O
ATOM   3195  OW0 WAT W 323      -3.540  -2.303 -11.595  1.00 35.37           O
ATOM   3196  OW0 WAT W 324      -8.444 -11.343  25.966  1.00 34.16           O
ATOM   3197  OW0 WAT W 325      -9.197  -3.147  27.671  1.00 34.91           O
ATOM   3198  OW0 WAT W 326      -5.861   6.821  -7.982  1.00 35.73           O
ATOM   3199  OW0 WAT W 327      10.062  -1.946 -13.617  1.00 36.61           O
ATOM   3200  OW0 WAT W 328     -10.656  -3.956  29.828  1.00 35.98           O
ATOM   3201  OW0 WAT W 329      27.520  13.568   9.092  1.00 34.52           O
ATOM   3202  OW0 WAT W 330     -13.835  20.571  21.432  1.00 35.55           O
ATOM   3203  OW0 WAT W 331       8.763  17.704  -6.219  1.00 35.66           O
ATOM   3204  OW0 WAT W 332       8.791  19.547  -1.536  1.00 35.85           O
ATOM   3205  OW0 WAT W 333       1.972 -24.287  16.659  1.00 36.07           O
ATOM   3206  OW0 WAT W 334       1.764   6.531  -9.997  1.00 35.95           O
ATOM   3207  OW0 WAT W 335      26.115 -21.431  23.463  1.00 35.92           O
ATOM   3208  OW0 WAT W 336       3.092 -20.316  22.836  1.00 36.59           O
ATOM   3209  OW0 WAT W 337       9.317 -26.480  18.754  1.00 35.55           O
ATOM   3210  OW0 WAT W 338      21.231  19.662  18.051  1.00 37.21           O
ATOM   3211  OW0 WAT W 339       6.594  19.484  19.344  1.00 37.53           O
ATOM   3212  OW0 WAT W 340       7.477  14.635  20.823  1.00 37.91           O
ATOM   3213  OW0 WAT W 341     -11.937  10.574  22.349  1.00 36.41           O
ATOM   3214  OW0 WAT W 342       7.548 -25.143   8.852  1.00 37.20           O
ATOM   3215  OW0 WAT W 343     -15.112  10.366  11.747  1.00 37.44           O
ATOM   3216  OW0 WAT W 344       1.187  10.146 -10.133  1.00 37.90           O
ATOM   3217  OW0 WAT W 345      27.638  -9.538  23.200  1.00 37.98           O
ATOM   3218  OW0 WAT W 346      11.116 -26.606  10.512  1.00 38.07           O
ATOM   3219  OW0 WAT W 347      30.049  12.630  12.175  1.00 36.48           O
ATOM   3220  OW0 WAT W 348       2.579 -21.238  16.750  1.00 37.11           O
ATOM   3221  OW0 WAT W 349      11.496  16.342  -9.873  1.00 39.00           O
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ATOM   3222  OW0 WAT W 350      -1.466 -16.623  20.756  1.00 36.99           O
ATOM   3223  OW0 WAT W 351      -0.545 -19.843  10.447  1.00 38.11           O
ATOM   3224  OW0 WAT W 352      21.379  12.373  20.657  1.00 37.85           O
ATOM   3225  OW0 WAT W 353      28.638   1.283  26.152  1.00 38.39           O
ATOM   3226  OW0 WAT W 354      26.602 -18.054  17.223  1.00 37.87           O
ATOM   3227  OW0 WAT W 355       7.428   6.106  33.816  1.00 38.44           O
ATOM   3228  OW0 WAT W 356       8.893  23.527   6.272  1.00 38.41           O
ATOM   3229  OW0 WAT W 357     -10.471   9.875  -2.931  1.00 36.99           O
ATOM   3230  OW0 WAT W 358      -0.662 -13.392  29.705  1.00 38.39           O
ATOM   3231  OW0 WAT W 359      -2.749 -13.844  23.936  1.00 36.78           O
ATOM   3232  OW0 WAT W 360      -6.451  -7.989 -11.128  1.00 38.41           O
ATOM   3233  OW0 WAT W 361       9.700  20.358   0.772  1.00 39.26           O
ATOM   3234  OW0 WAT W 362      -7.793  -2.309  -8.870  1.00 38.33           O
ATOM   3235  OW0 WAT W 363       6.887  20.392  -3.210  1.00 38.80           O
ATOM   3236  OW0 WAT W 364     -17.753   6.950  20.616  1.00 40.01           O
ATOM   3237  OW0 WAT W 365      28.379  16.628  17.436  1.00 37.42           O
ATOM   3238  OW0 WAT W 366       9.825 -12.183   6.908  1.00 38.16           O
ATOM   3239  OW0 WAT W 367       5.690   6.886 -12.186  1.00 40.11           O
ATOM   3240  OW0 WAT W 368      -2.055 -16.092  31.328  1.00 39.36           O
ATOM   3241  OW0 WAT W 369     -11.775  -1.154  -2.246  1.00 37.59           O
ATOM   3242  OW0 WAT W 370      -3.450   4.262 -10.734  1.00 38.16           O
ATOM   3243  OW0 WAT W 371     -14.001  -3.955  -0.918  1.00 38.31           O
ATOM   3244  OW0 WAT W 372       8.159   3.321 -11.997  1.00 37.67           O
ATOM   3245  OW0 WAT W 373      16.327  17.648   5.170  1.00 39.07           O
ATOM   3246  OW0 WAT W 374      13.238 -12.480 -13.011  1.00 38.95           O
ATOM   3247  OW0 WAT W 375      19.726   2.965  -8.515  1.00 38.29           O
ATOM   3248  OW0 WAT W 376      19.310  -9.518   5.350  1.00 38.81           O
ATOM   3249  OW0 WAT W 377     -15.073  10.383   1.720  1.00 41.26           O
ATOM   3250  OW0 WAT W 378       1.833   3.909  36.312  1.00 40.71           O
ATOM   3251  OW0 WAT W 379       7.669  -2.701 -13.009  1.00 38.35           O
ATOM   3252  OW0 WAT W 380      -0.042  22.891  13.930  1.00 38.98           O
ATOM   3253  OW0 WAT W 381      18.209  -4.980  33.399  1.00 39.29           O
ATOM   3254  OW0 WAT W 382      13.374  15.788   3.831  1.00 39.95           O
ATOM   3255  OW0 WAT W 383     -10.327  -7.958   3.125  1.00 38.85           O
ATOM   3256  OW0 WAT W 384      -3.650   3.813  32.973  1.00 39.43           O
ATOM   3257  OW0 WAT W 385      20.875   4.704  22.603  1.00 38.60           O
ATOM   3258  OW0 WAT W 386      14.314  17.681  -1.839  1.00 41.17           O
ATOM   3259  OW0 WAT W 387      19.223  15.552  -7.262  1.00 41.68           O
ATOM   3260  OW0 WAT W 388      33.270   4.365  19.865  1.00 40.05           O
ATOM   3261  OW0 WAT W 389       9.325  20.619  21.151  1.00 39.90           O
ATOM   3262  OW0 WAT W 390     -13.091  15.620   6.000  1.00 40.38           O
ATOM   3263  OW0 WAT W 391      23.491  19.179  -2.503  1.00 39.94           O
ATOM   3264  OW0 WAT W 392     -12.773   6.682   5.403  1.00 39.84           O
ATOM   3265  OW0 WAT W 393      28.152   1.672  -5.763  1.00 40.15           O
ATOM   3266  OW0 WAT W 394       0.217   0.249  39.323  1.00 39.21           O
ATOM   3267  OW0 WAT W 395      -8.727  22.236  15.741  1.00 42.52           O
ATOM   3268  OW0 WAT W 396      16.483  18.099  -4.316  1.00 41.15           O
ATOM   3269  OW0 WAT W 397       6.198   3.825  37.356  1.00 40.82           O
ATOM   3270  OW0 WAT W 398       7.009 -19.419   5.120  1.00 39.84           O
ATOM   3271  OW0 WAT W 399      10.448  18.227  -3.279  1.00 41.40           O
ATOM   3272  OW0 WAT W 400      12.628  19.457  14.821  1.00 39.84           O
ATOM   3273  OW0 WAT W 401      37.879  -8.908  11.587  1.00 40.44           O
ATOM   3274  OW0 WAT W 402      -1.899   8.875  27.727  1.00 41.39           O
ATOM   3275  OW0 WAT W 403      24.296   3.299  -8.463  1.00 40.53           O
ATOM   3276  OW0 WAT W 404       6.867   1.412  38.573  1.00 41.40           O
ATOM   3277  OW0 WAT W 405      22.366 -14.528  11.597  1.00 43.11           O
ATOM   3278  OW0 WAT W 406      23.833 -18.708  17.699  1.00 41.98           O
ATOM   3279  OW0 WAT W 407       1.838 -15.790  33.526  1.00 41.48           O
ATOM   3280  OW0 WAT W 408      27.474  -3.804  -1.240  1.00 40.65           O
ATOM   3281  OW0 WAT W 409      -5.174  19.174  25.726  1.00 41.76           O
ATOM   3282  OW0 WAT W 410       0.062  25.053  24.310  1.00 41.70           O
ATOM   3283  OW0 WAT W 411       4.471 -12.096 -12.960  1.00 43.28           O
ATOM   3284  OW0 WAT W 412      20.256 -13.113   2.826  1.00 41.10           O
ATOM   3285  OW0 WAT W 413      -5.840  -5.661  21.921  1.00 41.92           O
ATOM   3286  OW0 WAT W 414       8.684 -13.645  34.794  1.00 42.54           O
ATOM   3287  OW0 WAT W 415      13.914  -6.916 -13.882  1.00 41.71           O
ATOM   3288  OW0 WAT W 416      14.187 -11.282  31.629  1.00 41.23           O
ATOM   3289  OW0 WAT W 417      12.561  17.391   1.764  1.00 43.57           O
ATOM   3290  OW0 WAT W 418       3.232  17.233  22.744  1.00 42.83           O
ATOM   3291  OW0 WAT W 419      27.314   7.198  23.397  1.00 41.34           O
ATOM   3292  OW0 WAT W 420     -12.751   1.882  -3.237  1.00 40.27           O
ATOM   3293  OW0 WAT W 421       0.590 -24.813  14.244  1.00 41.89           O
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ATOM   3294  OW0 WAT W 422      -4.431  25.628  20.657  1.00 42.92           O
ATOM   3295  OW0 WAT W 423      10.735 -29.632  13.177  1.00 41.34           O
ATOM   3296  OW0 WAT W 424       7.818 -18.271  26.821  1.00 41.70           O
ATOM   3297  OW0 WAT W 425       2.544  -5.854 -14.071  1.00 42.37           O
ATOM   3298  OW0 WAT W 426     -10.926   0.955  20.550  1.00 43.69           O
ATOM   3299  OW0 WAT W 427      -1.971  15.314  -3.312  1.00 43.61           O
ATOM   3300  OW0 WAT W 428       1.504  15.490  -5.176  1.00 42.78           O
ATOM   3301  OW0 WAT W 429      24.825  -9.368  26.783  1.00 42.64           O
ATOM   3302  OW0 WAT W 430      14.033 -20.188   1.211  1.00 43.44           O
ATOM   3303  OW0 WAT W 431      23.267 -17.669  12.770  1.00 44.56           O
ATOM   3304  OW0 WAT W 432      17.150 -15.960   5.707  1.00 44.54           O
ATOM   3305  OW0 WAT W 433      -2.139   5.153  37.892  1.00 44.88           O
ATOM   3306  OW0 WAT W 434      21.785  -9.480   6.297  1.00 44.18           O
ATOM   3307  OW0 WAT W 435      25.968  -8.622  10.348  1.00 42.33           O
ATOM   3308  OW0 WAT W 436      -3.314 -13.078   5.090  1.00 43.68           O
ATOM   3309  OW0 WAT W 437     -10.754   6.347  21.686  1.00 43.50           O
ATOM   3310  OW0 WAT W 438       0.943  22.569  17.840  1.00 44.44           O
ATOM   3311  OW0 WAT W 439      24.968   8.402  -7.324  1.00 43.13           O
ATOM   3312  OW0 WAT W 440      16.500  -6.946   9.700  1.00 44.41           O
ATOM   3313  OW0 WAT W 441       0.557 -17.044  23.824  1.00 44.16           O
ATOM   3314  OW0 WAT W 442       1.825 -16.199  29.076  1.00 45.60           O
ATOM   3315  OW0 WAT W 443      32.689  -8.004   5.401  1.00 44.79           O
ATOM   3316  OW0 WAT W 444      22.281 -16.173  27.002  1.00 45.83           O
ATOM   3317  OW0 WAT W 445      23.674   1.373  27.678  1.00 45.60           O
ATOM   3318  OW0 WAT W 446      13.387 -27.439  12.003  1.00 45.57           O
ATOM   3319  OW0 WAT W 447      23.380  -3.087  30.367  1.00 44.29           O
ATOM   3320  OW0 WAT W 448      25.870  -2.427  29.466  1.00 45.76           O
ATOM   3321  OW0 WAT W 449      28.230 -12.183  20.780  1.00 46.33           O
ATOM   3322  OW0 WAT W 450       0.525 -12.459   8.685  1.00 46.37           O
ATOM   3323  OW0 WAT W 451       0.049   3.073  38.476  1.00 44.20           O
ATOM   3324  OW0 WAT W 452      15.358 -25.408  11.134  1.00 45.34           O
ATOM   3325  OW0 WAT W 453      -7.126  10.457  -5.602  1.00 46.42           O
ATOM   3326  OW0 WAT W 454     -15.541  12.545  14.559  1.00 44.77           O
ATOM   3327  OW0 WAT W 455       9.733  -8.250   9.274  1.00 46.50           O
ATOM   3328  OW0 WAT W 456      15.819 -14.661 -10.184  1.00 48.29           O
ATOM   3329  OW0 WAT W 457      24.696  -7.742   6.017  1.00 45.66           O
ATOM   3330  OW0 WAT W 458     -10.468  19.247  26.127  1.00 47.46           O
ATOM   3331  OW0 WAT W 459      12.789  -8.545  10.918  1.00 45.92           O
ATOM   3332  OW0 WAT W 460     -13.715   6.091   1.705  1.00 48.27           O
ATOM   3333  OW0 WAT W 461      29.183 -12.218  16.919  1.00 48.14           O
ATOM   3334  OW0 WAT W 462      -5.173   6.902  28.600  1.00 47.42           O
ATOM   3335  OW0 WAT W 463       5.020  22.830  14.837  1.00 48.29           O
ATOM   3336  OW0 WAT W 464       1.629 -27.213  10.934  1.00 45.82           O
ATOM   3337  OW0 WAT W 465      10.448 -11.702 -11.581  1.00 47.52           O
ATOM   3338  OW0 WAT W 466      25.475   0.155  -6.203  1.00 46.75           O
ATOM   3339  OW0 WAT W 467      11.999  19.475  -5.519  1.00 46.73           O
ATOM   3340  OW0 WAT W 468      29.707  -3.847  25.273  1.00 50.07           O
ATOM   3341  OW0 WAT W 469      20.987  -8.262   8.572  1.00 46.30           O
ATOM   3342  OW0 WAT W 470      25.831  15.569  12.286  1.00 49.36           O
ATOM   3343  OW0 WAT W 471      -9.628  18.946  14.121  1.00 49.44           O
ATOM   3344  OW0 WAT W 472     -14.232  19.028  24.748  1.00 49.03           O
ATOM   3345  OW0 WAT W 473      26.936 -13.463  12.361  1.00 48.35           O
ATOM   3346  OW0 WAT W 474      -9.922  -6.399  24.487  1.00 48.05           O
ATOM   3347  OW0 WAT W 475      20.086   9.651  23.257  1.00 47.80           O
ATOM   3348  OW0 WAT W 476       8.200  10.319 -11.614  1.00 48.09           O
ATOM   3349  OW0 WAT W 477       6.799   7.061  29.352  1.00 48.85           O
ATOM   3350  OW0 WAT W 478      10.735  -0.632  34.142  1.00 48.01           O
ATOM   3351  OW0 WAT W 479      -6.739  13.322  24.757  1.00 47.80           O
ATOM   3352  OW0 WAT W 480      33.317  -5.038  21.142  1.00 48.61           O
ATOM   3353  OW0 WAT W 481      16.742  18.491  19.979  1.00 48.67           O
ATOM   3354  OW0 WAT W 482      -3.257  -8.684  14.796  1.00 48.30           O
ATOM   3355  OW0 WAT W 483      -5.635 -12.310   6.861  1.00 47.68           O
ATOM   3356  OW0 WAT W 484      -6.546  -7.324  23.953  1.00 48.00           O
ATOM   3357  OW0 WAT W 485     -16.417  11.786  18.852  1.00 49.45           O
ATOM   3358  OW0 WAT W 486       8.671 -23.459  21.434  1.00 48.92           O
ATOM   3359  OW0 WAT W 487      -5.235 -11.988  16.287  1.00 51.42           O
ATOM   3360  OW0 WAT W 488      19.211   5.233  32.606  1.00 48.01           O
ATOM   3361  OW0 WAT W 489       3.094  22.345  20.038  1.00 47.93           O
ATOM   3362  OW0 WAT W 490      15.806 -10.355   6.028  1.00 48.03           O
ATOM   3363  OW0 WAT W 491      -6.950  -2.187  14.967  1.00 48.57           O
ATOM   3364  OW0 WAT W 492      12.467  21.040  -0.832  1.00 50.56           O
ATOM   3365  OW0 WAT W 493       0.205  16.980  -3.263  1.00 49.08           O
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	ATOM	3366	OW0	WAT	W	494	-0.236	-13.180	11.296	1.00	49.99	O
	ATOM	3367	OW0	WAT	W	495	6.150	-23.964	20.680	1.00	48.18	O
	ATOM	3368	OW0	WAT	W	496	-13.719	7.872	-0.329	1.00	48.87	O
	ATOM	3369	OW0	WAT	W	497	-12.209	15.214	0.936	1.00	50.57	O
5	ATOM	3370	OW0	WAT	W	498	-2.924	-9.799	-15.659	1.00	51.19	O
	ATOM	3371	OW0	WAT	W	499	6.248	-11.289	9.950	1.00	49.69	O
	ATOM	3372	OW0	WAT	W	500	17.344	-18.775	4.262	1.00	50.03	O
	ATOM	3373	OW0	WAT	W	501	16.733	-8.345	33.918	1.00	50.77	O
	ATOM	3374	OW0	WAT	W	502	18.913	19.056	-3.412	1.00	52.40	O
10	ATOM	3375	OW0	WAT	W	503	19.260	-16.015	-9.840	1.00	52.05	O
	ATOM	3376	OW0	WAT	W	504	27.834	12.908	-5.570	1.00	53.02	O
	ATOM	3377	OW0	WAT	W	505	24.475	-19.432	26.879	1.00	49.42	O
	ATOM	3378	OW0	WAT	W	506	8.968	-29.748	10.541	1.00	51.81	O
	ATOM	3379	OW0	WAT	W	507	-11.867	-10.300	-5.857	1.00	49.98	O
15	ATOM	3380	OW0	WAT	W	508	-0.894	-7.386	15.813	1.00	53.61	O
	ATOM	3381	OW0	WAT	W	509	-6.619	1.184	16.728	1.00	51.96	O
	ATOM	3382	OW0	WAT	W	510	-7.892	-6.118	11.419	1.00	51.35	O
	ATOM	3383	OW0	WAT	W	511	35.158	3.849	21.698	1.00	49.52	O
	ATOM	3384	OW0	WAT	W	512	30.968	1.931	-2.551	1.00	53.02	O
20	ATOM	3385	OW0	WAT	W	513	14.962	20.345	-5.321	1.00	51.10	O
	ATOM	3386	OW0	WAT	W	514	10.299	20.332	3.887	1.00	51.28	O
	ATOM	3387	OW0	WAT	W	515	9.136	-4.930	-14.241	1.00	55.74	O
	ATOM	3388	OW0	WAT	W	516	16.017	18.130	16.960	1.00	52.99	O
	ATOM	3389	OW0	WAT	W	517	-10.226	-2.977	-7.939	1.00	52.52	O
25	ATOM	3390	OW0	WAT	W	518	-7.913	-1.057	33.785	1.00	55.56	O
	ATOM	3391	OW0	WAT	W	519	-4.603	9.544	27.704	1.00	53.84	O
	ATOM	3392	OW0	WAT	W	520	36.037	-9.066	14.613	1.00	54.07	O
	ATOM	3393	OW0	WAT	W	521	-2.613	-5.713	-15.830	1.00	56.11	O
	ATOM	3394	OW0	WAT	W	522	22.102	17.648	-5.091	1.00	55.53	O
30	ATOM	3395	OW0	WAT	W	523	-4.113	-12.228	31.460	1.00	57.69	O
	ATOM	3396	OW0	WAT	W	524	-12.219	-5.923	-5.197	1.00	56.14	O
	ATOM	3397	OW0	WAT	W	525	8.378	-6.929	44.771	1.00	55.77	O
	ATOM	3398	OW0	WAT	W	526	21.973	-11.541	8.343	1.00	58.28	O
	ATOM	3399	OW0	WAT	W	527	7.445	-9.109	-13.773	1.00	59.63	O
35	ATOM	3400	OW0	WAT	W	528	6.357	-28.394	18.254	1.00	58.45	O
	ATOM	3401	OW0	WAT	W	529	24.736	-10.387	1.413	1.00	59.79	O
	ATOM	3402	OW0	WAT	W	530	17.122	-2.581	-8.119	1.00	59.43	O
	ATOM	3403	OW0	WAT	W	531	18.599	-24.379	17.004	1.00	60.10	O
	ATOM	3404	OW0	WAT	W	532	20.743	6.549	24.623	1.00	62.58	O
40	ATOM	3405	OW0	WAT	W	533	30.196	-6.698	5.283	1.00	61.40	O
	ATOM	3406	OW0	WAT	W	534	30.992	9.365	-2.158	1.00	62.44	O

SEQUENCE LISTING

(1) GENERAL INFORMATION:
(i) APPLICANT:
(A) NAME: NOVO NORDISK A/S
(B) STREET: Novo Alle
(C) CITY: Bagsvaerd
(E) COUNTRY: Denmark
(F) POSTAL CODE (ZIP): DK-2880
(G) TELEPHONE: +45 44 44 88 88
(H) TELEFAX: +45 44 49 32 56

(ii) TITLE OF INVENTION: FAMILY 6 ENDO-1,4-BETA-GLUCANASE VARIANTS AND CLEANING COMPOSITIONS CONTAINING THEM

(iii) NUMBER OF SEQUENCES: 4

(iv) COMPUTER READABLE FORM:
(A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: PatentIn Release #1.0, Version #1.30 (EPO)

(2) INFORMATION FOR SEQ ID NO: 1:
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 1422 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: DNA (genomic)
(vi) ORIGINAL SOURCE:
(A) ORGANISM: Humicola insolens DSM 1800

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

ATGGCCAAGT TTTTCCTTAC TGCTGCCTTT GCGGCTGCCG CTCTCGCCGC TCCCGTTGTT 60

GAGGAGCGCC AGAACTGTGC CTCGACTTGG GGCCAGTGCG GTGGCATCGG CTTCAATGGC 120

CCGACTTGCT GCCAGTCTGG TAGCACTTGC GTGAAGCAGA ACGACTGGTA CTCCCAGTGC 180

CTGCCTGGCA GCCAGGTGAC GACGTCGACC ACCTCGAGCT CGTCGACGAC GTCTCGCGCC 240

ACCTCCACCA CCAGCGCTGG TGGCGTGACC TCGATCACCA CTGCTCCCAC CCGCACCGTC 300

ACCATCCCCG GCGGTGCCTC GACCACTGCC AGCTACAACG GCAACCCCTT CGAGGGTGTT 360

CAGCTTTGGG CCAACAACTA CTACCGGTCC GAAGTTCACA CTCTTGCCAT CCCTCAGATC 420

ACTGACCCTG CCCTGAGGGC TGCGGCCTCT GCTGTTGCCG AGGTTCCCAG CTTCCAGTGG 480

CTCGACCGGA ACGTCACCGT CGACACCCTG CTCGTCCAGA CCCTCTCTGA GATCCGCGAG 540

GCGAACCAAG CGGGCGCGAA TCCCCAATAT GCTGCCCAAA TCGTCGTTTA CGACTTGCCT 600

GACCGCGACT GCGCTGCCGC GGCTTCGAAC GGCGAGTGGG CCATCGCCAA CAACGGCGTC 660

AACAACTACA AGGCATACAT CAACCGCATC CGCGAGATTC TCATTTCCTT CTCGGATGTC 720

CGCACCATTC TGGTCATTGA GCCCGACTCG CTGGCCAACA TGGTCACCAA CATGAACGTT 780

CCCAAGTGCA GCGGTGCCGC CTCGACCTAC CGCGAGTTGA CCATCTATGC CCTCAAGCAG 840

CTCGACCTCC CGCACGTCGC CATGTACATG GACGCCGGCC ACGCTGGCTG GCTTGGCTGG 900

CCCGCCAACA TCCAGCCCGC CGCTGAGCTC TTCGCCAAGA TCTACGAGGA TGCCGGCAAG 960

CCCCGCGCCG TCCGCGGTCT CGCCACCAAC GTCGCCAACT ACAACGCCTG GAGCGTCTCG 1020

AGCCCGCCGC CCTACACCAG CCCCAACCCC AACTACGACG AGAAGCACTA CATCGAGGCC 1080

TTCCGCCCCC TCCTCGAGGC CCGCGGCTTC CCCGCCCAGT TCATCGTCGA CCAGGGCCGC 1140

AGCGGCAAGC AGCCCACCGG CCAGAAGGAA TGGGGCCACT GGTGTAATGC TATCGGTACG 1200

GGCTTCGGTA TGCGCCCTAC TGCCAACACC GGCCACCAGT ACGTCGATGC CTTCGTCTGG 1260

GTCAAGCCCG GCGGTGAGTG CGACGGCACC AGCGACACGA CCGCTGCCCG CTACGACTAC 1320

CACTGCGGTC TCGAGGACGC CCTCAAGCCC GCCCCTGAAG CTGGTCAGTG GTTTAATGAA 1380

TATTTTATTC AGTTGCTGCG TAACGCCAAC CCGCCGTTCT AG 1422

(2) INFORMATION FOR SEQ ID NO: 2:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 473 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Humicola insolens DSM 1800

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

Met Ala Lys Phe Phe Leu Thr Ala Ala Phe Ala Ala Ala Ala Leu Ala
1 5 10 15

Ala Pro Val Val Glu Glu Arg Gln Asn Cys Ala Ser Thr Trp Gly Gln
20 25 30

Cys Gly Gly Ile Gly Phe Asn Gly Pro Thr Cys Cys Gln Ser Gly Ser
35 40 45

Thr Cys Val Lys Gln Asn Asp Trp Tyr Ser Gln Cys Leu Pro Gly Ser
50 55 60

Gln Val Thr Thr Ser Thr Thr Ser Ser Ser Ser Thr Thr Ser Arg Ala
65 70 75 80

Thr Ser Thr Thr Ser Ala Gly Gly Val Thr Ser Ile Thr Thr Ala Pro
85 90 95

Thr Arg Thr Val Thr Ile Pro Gly Gly Ala Ser Thr Thr Ala Ser Tyr
100 105 110

Asn Gly Asn Pro Phe Glu Gly Val Gln Leu Trp Ala Asn Asn Tyr Tyr
115 120 125

Arg Ser Glu Val His Thr Leu Ala Ile Pro Gln Ile Thr Asp Pro Ala
130 135 140

Leu Arg Ala Ala Ala Ser Ala Val Ala Glu Val Pro Ser Phe Gln Trp
145 150 155 160

Leu Asp Arg Asn Val Thr Val Asp Thr Leu Leu Val Gln Thr Leu Ser
165 170 175

Glu Ile Arg Glu Ala Asn Gln Ala Gly Ala Asn Pro Gln Tyr Ala Ala
180 185 190

Gln Ile Val Val Tyr Asp Leu Pro Asp Arg Asp Cys Ala Ala Ala Ala
195 200 205

Ser Asn Gly Glu Trp Ala Ile Ala Asn Asn Gly Val Asn Asn Tyr Lys
210 215 220

Ala Tyr Ile Asn Arg Ile Arg Glu Ile Leu Ile Ser Phe Ser Asp Val
225 230 235 240

Arg Thr Ile Leu Val Ile Glu Pro Asp Ser Leu Ala Asn Met Val Thr
245 250 255

Asn Met Asn Val Pro Lys Cys Ser Gly Ala Ala Ser Thr Tyr Arg Glu
260 265 270

Leu Thr Ile Tyr Ala Leu Lys Gln Leu Asp Leu Pro His Val Ala Met
275 280 285

Tyr Met Asp Ala Gly His Ala Gly Trp Leu Gly Trp Pro Ala Asn Ile
290 295 300

Gln Pro Ala Ala Glu Leu Phe Ala Lys Ile Tyr Glu Asp Ala Gly Lys
305 310 315 320

Pro Arg Ala Val Arg Gly Leu Ala Thr Asn Val Ala Asn Tyr Asn Ala
325 330 335

Trp Ser Val Ser Ser Pro Pro Pro Tyr Thr Ser Pro Asn Pro Asn Tyr
340 345 350

Asp Glu Lys His Tyr Ile Glu Ala Phe Arg Pro Leu Leu Glu Ala Arg
355 360 365

Gly Phe Pro Ala Gln Phe Ile Val Asp Gln Gly Arg Ser Gly Lys Gln
370 375 380

Pro Thr Gly Gln Lys Glu Trp Gly His Trp Cys Asn Ala Ile Gly Thr
385 390 395 400

Gly Phe Gly Met Arg Pro Thr Ala Asn Thr Gly His Gln Tyr Val Asp
405 410 415

Ala Phe Val Trp Val Lys Pro Gly Gly Glu Cys Asp Gly Thr Ser Asp
420 425 430

Thr Thr Ala Ala Arg Tyr Asp Tyr His Cys Gly Leu Glu Asp Ala Leu
435 440 445

Lys Pro Ala Pro Glu Ala Gly Gln Trp Phe Asn Glu Tyr Phe Ile Gln
450 455 460

Leu Leu Arg Asn Ala Asn Pro Pro Phe
465 470

(2) INFORMATION FOR SEQ ID NO: 3:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1483 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Humicola insolens DSM 1800

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

CCTAGGTCGC CCACCATGCG CGTTTCTCTT GCTCTCCTCG CCTACCTGCT CAGCGCCGCC 60

GGCGCCTCGC CCGTCCCGGA GCTCGAGCCC CGGCAGTCCG GCAACCCCTT CTCCGGCCGC 120

ACCCTGCTGG TCAACTCGGA CTATAGCAGC AAGCTCGACC AGACGCGCCA GGCCTTCCTG 180

TCCCGCGGCG ACCAGACCAA CGCTGCCAAG GTCAAGTACG TCCAGGAGAA GGTTGGCACC 240

TTCTATTGGA TCTCCAACAT CTTCCTCCTG CGCGACATCG ACGTTGCCAT CCAGAATGCG 300

CGCGCCGCCA AGGCCCGCGG CGAGAACCCC ATCGTCGGTC TCGTCCTGTA CAACCTCCCC 360

GACCGCGACT GCAGCGCCGG CGAGTCCTCT GGCGAGCTTA AGCTCTCCCA GAACGGCCTG 420

AACCGGTACA AGAACGAGTA CGTCAACCCG TTCGCCCAGA AGCTCAAGGC CGCGTCCGAC 480

GTGCAGTTCG CCGTCATCCT CGAGCCCGAT GCCATCGGCA ACATGGTCAC GGGCACCAGC 540

GCCTTCTGCC GCAACGCCCG CGGCCCTCAG CAGGAGGCCA TCGGCTATGC TATCTCTCAG 600

CTCCAGGCCA GCCACATCCA CCTCTACCTG GATGTCGCCA ACGGCGGCTG GCTCGGCTGG 660

GCCGATAAGC TCGAGCCAAC TGCCCAGGAG GTCGCCACCA TCCTCCAAAA GGCCGGTAAC 720

AACGCCAAGA TCCGCGGCTT CTCCAGCAAC GTCTCCAACT ACAACCCCTA TTCCACCAGC 780

AACCCGCCGC CCTACACCTC GGGCAGCCCG TCGCCCGACG AGTCGCGCTA CGCCACCAAC 840

ATCGCCAACG CCATGCGCCA GCGCGGCCTG CCGACCCAGT TCATCATCGA CCAGAGCCGC 900

GTCGCGCTCA GCGGCGCCCG CAGCGAGTGG GGCCAATGGT GCAACGTGAA CCCCGCCGGC 960

TTCGGCCAGC CCTTCACCAC CAACACCAAC AACCCCAACG TCGACGCCAT CGTCTGGGTC 1020

AAGCCCGGCG GCGAGTCGGA CGGCCAGTGC GGCATGGGCG GCGCCCCGGC CGCCGGCATG 1080

TGGTTCGACG CGTACGCGCA GATGCTGACG CAGAACGCCC ACGACGAGAT CGCCCGCGGC 1140

GCTGCCGGCA GTGGTGGTGG CAACAACGGC GGCGGCAACA ACCCCAACCC GACCCCGACC 1200

AACCCGACAA ACCCGGGCCC GACCAGCAAC CCGGGCGGCG GCAACTGCGC CAGCAAGTGG 1260

GGCCAGTGCG GTGGTCAGGG ATGGGCCGGC CCGACCTGCT GCGAGGCTGG GTCGACTTGC 1320

ACCCGCCAGA ACGAGTGGTA CTCACAGTGC CTGTAAAGAA AAAAGAGTGC GGTTGCTGTC 1380

ACGGGTGTGA CGTTGTATAT AGCACGTCCC CGGTTAGGCT TTAGAGCACA CTGGCGGCCG 1440

CTCGAGCATG CATCTAGAGG GTGACTGACA CCTGGCGGTA GAC 1483

(2) INFORMATION FOR SEQ ID NO: 4:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 446 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Humicola insolens DSM 1800

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

Met Arg Val Ser Leu Ala Leu Leu Ala Tyr Leu Leu Ser Ala Ala Gly
1 5 10 15

Ala Ser Pro Val Pro Glu Leu Glu Pro Arg Gln Ser Gly Asn Pro Phe
20 25 30

Ser Gly Arg Thr Leu Leu Val Asn Ser Asp Tyr Ser Ser Lys Leu Asp
35 40 45

Gln Thr Arg Gln Ala Phe Leu Ser Arg Gly Asp Gln Thr Asn Ala Ala
50 55 60

Lys Val Lys Tyr Val Gln Glu Lys Val Gly Thr Phe Tyr Trp Ile Ser
65 70 75 80

Asn Ile Phe Leu Leu Arg Asp Ile Asp Val Ala Ile Gln Asn Ala Arg
85 90 95

Ala Ala Lys Ala Arg Gly Glu Asn Pro Ile Val Gly Leu Val Leu Tyr
100 105 110

Asn Leu Pro Asp Arg Asp Cys Ser Ala Gly Glu Ser Ser Gly Glu Leu
115 120 125

Lys Leu Ser Gln Asn Gly Leu Asn Arg Tyr Lys Asn Glu Tyr Val Asn
130 135 140

Pro Phe Ala Gln Lys Leu Lys Ala Ala Ser Asp Val Gln Phe Ala Val
145 150 155 160

Ile Leu Glu Pro Asp Ala Ile Gly Asn Met Val Thr Gly Thr Ser Ala
165 170 175

Phe Cys Arg Asn Ala Arg Gly Pro Gln Gln Glu Ala Ile Gly Tyr Ala
180 185 190

Ile Ser Gln Leu Gln Ala Ser His Ile His Leu Tyr Leu Asp Val Ala
195 200 205

Asn Gly Gly Trp Leu Gly Trp Ala Asp Lys Leu Glu Pro Thr Ala Gln
210 215 220

Glu Val Ala Thr Ile Leu Gln Lys Ala Gly Asn Asn Ala Lys Ile Arg
225 230 235 240

Gly Phe Ser Ser Asn Val Ser Asn Tyr Asn Pro Tyr Ser Thr Ser Asn
245 250 255

Pro Pro Pro Tyr Thr Ser Gly Ser Pro Ser Pro Asp Glu S r Arg Tyr
260 265 270

Ala Thr Asn Ile Ala Asn Ala Met Arg Gln Arg Gly Leu Pro Thr Gln
275 280 285

Phe Ile Ile Asp Gln Ser Arg Val Ala Leu Ser Gly Ala Arg Ser Glu
290 295 300

Trp Gly Gln Trp Cys Asn Val Asn Pro Ala Gly Phe Gly Gln Pro Phe
305 310 315 320

Thr Thr Asn Thr Asn Asn Pro Asn Val Asp Ala Ile Val Trp Val Lys
325 330 335

Pro Gly Gly Glu Ser Asp Gly Gln Cys Gly Met Gly Gly Ala Pro Ala
340 345 350

Ala Gly Met Trp Phe Asp Ala Tyr Ala Gln Met Leu Thr Gln Asn Ala
355 360 365

His Asp Glu Ile Ala Arg Gly Ala Ala Gly Ser Gly Gly Gly Asn Asn
370 375 380

Gly Gly Gly Asn Asn Pro Asn Pro Thr Pro Thr Asn Pro Thr Asn Pro
385 390 395 400

Gly Pro Thr Ser Asn Pro Gly Gly Gly Asn Cys Ala Ser Lys Trp Gly
405 410 415

Gln Cys Gly Gly Gln Gly Trp Ala Gly Pro Thr Cys Cys Glu Ala Gly
420 425 430

Ser Thr Cys Thr Arg Gln Asn Glu Trp Tyr Ser Gln Cys Leu
435 440 445

CLAIMS

1. Cleaning composition comprising one or more enzymes having cellulolytic activity wherein at least 25% of the total weight of cellulolytic active protein derives from the presence of a *Humicola* endo-1,4-β-glucanase or *Humicola*-like cellulase of the glycosyl hydrolase family 6.

2. Cleaning composition according to claim 1, wherein the *Humicola*-like cellulase comprises a catalytically core domain which has an amino acid sequence being at least 35% homologous to SEQ ID NO:4.

3. Cleaning composition according to claim 1 or 2, wherein the endo-1,4-β-glucanase comprises one or two cellulose binding domains (CBD) operably linked to the catalytically active domain.

4. Cleaning composition according to any of the claims 1-3 wherein the composition is a detergent composition.

5. Cleaning composition according to claim 4 wherein the detergent composition comprises one or more components selected from anionic, nonionic, cationic, amphoteric, ampholytic and zwitterionic surfactants, bleaching agents, additional enzymes, sud suppressores, dispersants, soil suspension and anti-redeposition agents, smectite clays, and builder components.

6. Cleaning composition according to claim 4 or 5 wherein the detergent composition is a granular detergent composition containing no more than 40% by weight of inorganic filler salt.

7. Cleaning composition according to claim 6 wherein the granular detergent composition contains no more than 15% by weight of inorganic filler salt.

8. Cleaning composition according to claim 5 wherein the detergent composition is a heavy duty liquid composition.

9. Cleaning composition according to any of the claims 4-8 wherein the enzymes are selected from the group consisting of proteases, cellulases, β-glucanases, hemicellulases, lipases, peroxidases, laccases, α-amylase, glucoamylases, cutinases, pectinases, reductases, oxidases, phenoloxidases, ligninases, pullulanases, arabinosidases or mixtures thereof.

10. Cleaning composition according to any of the claims 4-9 which is a laundry detergent additive.

11. Cleaning composition according to any of the claims 1-3 wherein the composition is a fabric softener or fabric conditioning composition for the treatment of fabrics.

12. Cleaning composition according to claim 11 wherein the fabric softener composition comprises from about 1% to about 90% of one or more cationic fabric softening agents, nonionic fabric softening agents, or mixtures thereof.

13. Cleaning composition according to claim 12 comprising from about 2% to about 50% by weight of one or more fabric softening agents.

14. Cleaning composition according to claim 12 or 13 wherein the cationic fabric softening agents comprise quaternary ammonium softening agent or amine precursor thereof.

15. Cleaning composition according to claim 14 wherein the quaternary ammonium softening agent is N,N-di(2-tallowoyl-oxy-ethyl)-N,N-dimethyl ammonium chloride.

16. Cleaning composition according to any of the claims 1-15 wherein endo-1,4-β-glucanase is derived or derivable from the fungus *Orpinomyces sp.*

17. Cleaning composition according to any of the claims 1-15 wherein endo-1,4-β-glucanase is derived or derivable from the fungus *Neocallimastix patriciarum.*

18. Cleaning composition according to any of the claims 1-15 wherein endo-1,4-β-glucanase is derived or derivable from the fungus *Trichoderma reesei*.

19. Cleaning composition according to any of the claims 1-15 wherein endo-1,4-β-glucanase is derived or derivable from the fungus *Fusarium oxysporum*.

20. Cleaning composition according to any of the claims 1-19 which comprises the family 6 endo-1,4-β-glucanase in an amount corresponding to from about 1 ECU to about 100000 ECU per liter washing or rinsing solution.

21. Cleaning composition according to any of the claims 1-20 which further comprises an endo-1,4-β-glucanase of the glycosyl hydrolase family 5, or an endo-1,4-β-glucanase of the glycosyl hydrolase family 7, or an endo-1,4-β-glucanase of the glycosyl hydrolase family 8, or an endo-1,4-β-glucanase of the glycosyl hydrolase family 9, or an endo-1,4-β-glucanase of the glycosyl hydrolase family 44, or an endo-1,4-β-glucanase of the glycosyl hydrolase family 45, or an endo-1,4-β-glucanase of the glycosyl hydrolase family 48, or an endo-1,4-β-glucanase of the glycosyl hydrolase family 12 optionally being operably linked to a cellulose binding domain, or any mixture thereof.

22. A process for machine treatment of fabrics which process comprises treating fabric during a rinse cycle of a machine washing process with a rinse solution containing the composition according to any of the claims 11-21.

23. A method of constructing a variant of a parent *Humicola* family 6 endo-beta-1,4-glucanase, which variant has endo-beta-1,4-glucanase activity and improved detergent compability as compared to the parent endo-beta-1,4-glucanase, which method comprises

i) analysing the structure of the parent *Humicola* family 6 endo-beta-1,4-glucanase to identify at least one amino acid residue or at least one structural part of the *Humicola* family 6 endo-beta-1,4-glucanase catalytically core domain structure, which amino acid residue or structural part is believed to be of relevance for altering the detergent compatibility of the parent *Humicola* family 6 endo-beta-1,4-glucanase as evaluated on the basis of structural or functional considerations,

ii) constructing a *Humicola* family 6 endo-beta-1,4-glucanase variant, which as compared to the parent *Humicola* family 6 endo-beta-1,4-glucanase has been modified in the amino acid residue or structural part identified in i) so as to alter the detergent compatibility, and, optionally,

iii) testing the resulting *Humicola* family 6 endo-beta-1,4-glucanase variant with respect to detergent compatibility.

24. The method according to claim 23, wherein the structural part to be modified is the binding cleft, the loop region encompassing the binding cleft, or the side chain of the catalytic acid Asp139.

25. A variant of a parent *Humicola* family 6 endo-beta-1,4-glucanase, which comprises a mutation in a position corresponding to at least one of the following positions in SEQ ID NO:4: K20, S56, S94, A95, K103, A182, N183 and Q318.

26. The variant according to claim 25, which comprises at least one of the mutations:

K20E
S56D
S94D
A95G
K103E
K103Q
A182G
N183E

A182G+N183H
Q318E

27. A method of constructing a variant of a parent *Humicola*-like family 6 cellulase, which variant has endo-beta-1,4-glucanase activity and improved detergent compatibility as compared to the parent cellulase, which method comprises
i) comparing the three-dimensional structure of the *Humicola* endo-beta-1,4-glucanase with the structure of a *Humicola*-like cellulase,
ii) identifying a part of the *Humicola*-like cellulase structure which is different from the *Humicola* endo-beta-1,4-glucanase structure and which from structural or functional considerations is contemplated to be responsible for differences in the detergent compatibility of the *Humicola* endo-beta-1,4-glucanase and *Humicola*-like cellulase,
iii) modifying the part of the *Humicola*-like cellulase identified in ii) whereby a *Humicola*-like endo-beta-1,4-glucanase variant is obtained, which has an improved detergent compatibility compared to the parent *Humicola*-like cellulase , and optionally,
iv) testing the resulting *Humicola*-like endo-beta-1,4-glucanase variant with respect to detergent compatibility.

28. The method according to claim 27, wherein, in step iii), the part of the *Humicola*-like cellulase is modified so as to resemble the corresponding part of the *Humicola* family 6 endo-beta-1,4-glucanase.

29. The method according to claim 27 or 28, wherein, in step iii), the modification is accomplished by deleting one or more amino acid residues of the part of the *Humicola*-like cellulase to be modified; or the modification is accomplished by replacing one or more amino acid residues of the part of the *Humicola*-like cellulase to be modified with the amino acid residues occupying corresponding positions in the *Humicola* endo-beta-1,4-glucanase; or the modification is accomplished by insertion of one or more amino acid residues present in the *Humicola* endo-beta-1,4-glucanase into a corresponding position in the *Humicola*-like cellulase.

30. The method according to any of claims 27-29, wherein the *Humicola*-like cellulase is selected from the group consisting of *Neocallimastix patriciarum* endo-beta-1,4-glucanase, *Orpinomyces sp.* endo-beta-1,4-glucanase, *Trichoderma reseei* exoglucanase, *Agaricus bispora* exoglucanase, *Phanerochaete chrysosporium* exoglucanse, *Penicillium purpurogenum* exoglucanase, *Acremonium cellulyticus* exoglucanase, *Fusarium oxysporum* exoglucanase and homologues thereof.

31. The method according to claim 23 or 27, wherein the parent *Humicola* endo-beta-1,4-glucanase is derived from a strain of *Humicola insolens*.

32. The method according to claim 31, wherein the parent *Humicola* endo-beta-1,4-glucanase is derived from *Humicola insolens,* DSM 1800.

33. An isolated polynucleotide molecule comprising a DNA sequence encoding an endo-beta-1,4-glucanase variant according to claim 26.

34. A recombinant expression vector which carries the polynucleotide molecule according to claim 33.

35. A cell which is transformed with the polynucleotide molecule according to claim 33 or a vector according to claim 34.

36. The cell according to claim 35, which is a microorganism.

37. The cell according to claim 36, which is a bacterium or a fungus.

38. A cell according to claim 37, which is a *Fusarium oxysporum,* an *Aspergillus niger* or an *Aspergillus oryzae* cell.

39. Cleaning composition comprising an endo-beta-1,4-glucanase which is constructed using the method according to any of the claims 23, 24 and 27-32.

```
!SS_HI_CEL6B    ------.........SS...HHHHHHHHHHHHHHHH....HHHHHHHHHHHHH....SSS.
HI_CEL6B        ------QSGNPFSGRTLLVNSDYSSKLDQTRQAFLSRGDQTNAAKVKYVQEKVGTFYWIS
AC              ------ASGNPFSGYQLYANPYYSSQEVHTLAIPSLTG--S-LAAAATKAAEIPSFVWLD
PP              ------ASGNPFSGYQLYANPYYSSEVHTLAIPSLTGS----LAAAATKAAEIPSFVWLD
P07987          ------YSGNPFVGVTPWANAYYASEVSSLAIPSLTGA----MATAAAAVAKVPSFMWLD
P46236          ------ASDNPYAGVDLWANNYYRSEVMNLAVPKLSGA----KATAAAKVADVPSFQWMD
HI_CEL6A        ------YNGNPFEGVQLWANNYYRSEVHTLAIPQITDP---ALRAAASAVAEVPSFQWLD
E11341          ------YNGNPFEGVQLWANNYYRSEVHTLAIPQITDP---ALRAAASAVAEVPSFQWLD
P49075          ------GAGNPYTGKTVWLSPFYADEVAQAAADISNPS----LATKAASVAKIPTFVWFD
Q02321          ------SANNPWTGFQIFLSPYYANEVAAAAKQITDPT----LSSKAASVANIPTFTWLD
P78721          ------PTSDNFFENELYSNYKFQGEVDQSIQRLSGS-----LQEKAKKVKYVPTAAWLA
P78720          ------PSSDNFFENEIYSNYKFQGEVDISIKKLNGD-----LKAKAEKVKYVPTAVWLA
Q12646          NNGWGSGSTKNFFDNQIYANPKFIEEVNSSIPRLSYD-----LQQKAQKVKNVPTAVWLA
                          . :       .  :  :                          : :  *:

!SS_HI_CEL6B    .-....HHHHHHHHHHHHH-HH....SSSSSSS..-.....................HHHH
HI_CEL6B        N-IFLLRDIDVAIQNARAA-KARGENPIVGLVLYN-LPDRDCSAGESSGELKLSQNGLNR
AC              T-AAKVPTMGTYLANIEAANKAGASPPIAGFVVYD-LPDRDCAAAASNGEYTVANNGVAN
PP              T-AAKVPTMGTYLANIEAANKAGASPPIAGIFVVYDLPDRDCAAAASNGEYTVANNGVAN
P07987          T-LDKTPLMEQTLADIRTANKNGG--NYAGQFVVYDLPDRDCAALASNGEYSIADGGVAK
P46236          T-YDHISLMEDTLADIRKANKAGG--KYAGQFVVYDLPNRDCAAAASNGEYSLDKDGANK
HI_CEL6A        RNVTVDTLLVQTLSEIREANQAGANPQYAAQIVVYDLPDRDCAAAASNGEWAIANNGVNN
E11341          RNVTVDTLLVETLSEIRAANQAGANPPYAAQIVVYDLPDRDCAAAASNGGIWAANNGANN
P49075          T-VAKVPDLGGYLADARSK-------NQLVQIVVYDLPDRDCAALASNGEFSLANDGLNK
Q02321          S-VAKIPDLGTYLASASALGKSTG-TKQLVQIVIYDLPDRDCAAKASNGEFSIANNGQAN
P78721          W-SGATNEVARYLNEAGSK---------TVVFVLYMIPTRDCNAGGSNG----GADNLST
P78720          W-DGAPQEVPRYLQEAGNK---------TVVFVLYMIPTRDCGANASAG----GSATIDK
Q12646          W-DGATGEVAQHLKAAGSK---------TVVFIMYMIPTRDCNANASAG----GAGNLNT
                      :   :                    .:   :* *** *  * *

!SS_HI_CEL6B    HHHH.HHHHHHHHHH.....SSSSS...HHHHHHH...-HHHHHHHHHHHHHHHHHHHH..
HI_CEL6B        YKNEYVNPFAQKLKAASDVQFAVILEPDAIGNMVTGTS-AFCRNARGPQQEAIGYAISQL
AC              YK-AYIDSIVAQLKAYPDVHTILIIEPDSLANMVTNLSTAKCAEAQSAYYECVNYALINL
PP              YK-AYIDSIVAQLKAYPDVHTILIIEPDSLANMVTNLSTAKCAEAQSAYYECVNYALINL
P07987          YK-NYIDTIRQIVVEYSDIRTLLVIEPDSLANLVTNLGTPKCANAQSAYLECINYAVTQL
P46236          YK-AYIAKIKGILQNYSDTKVILVIEPDSLANLVTNLNVDKCAKAESAYKELTVYAIKEL
HI_CEL6A        YK-AYINRIREILISFSDVRTILVIEPDSLANMVTNMNVPKCSGAASTYRELTIYALKQL
E11341          YK-GYINRIREILISFSDVRTILVIEPDSLANMVTNMNVAKCSGAASTYRELTIYALKQL
P49075          YK-NYVDQIAAQIKQFPDVSVVAVIEPDSLANLVTNLNVQKCANAQSAYKEGVIYAVQKL
Q02321          YE-NYIDQIVAQIQQFPDVRVVAVIEPDSLANLVTNLNVQKCANAKTTYLACVNYALTNL
P78721          YQ-GYVNSIYNTINQYPNSRIVMIIEPDTIGNLVTANN-ANCRNVHDMHKQALSYAISKF
P78720          YK-GYINNIYNTSNQYKNSKIVMILEPDTIGNLVTNNN-DNCRNVRNMHKQALSYAISKF
Q12646          YK-GYVDNIARTIRSYPNSKVVMILEPDTLGNLVTANS-ANCQNVRNLHKNALSYGVNVF
                *:  *:  :        :     ::***::.*:**  .   *  .         *.:  :

!SS_HI_CEL6B    -....SSSSSS...HHHH.....HHHHHHHHHHHHHHH.......SSSS..........
HI_CEL6B        -QASHIHLYLDVANGGWLGWADKLEPTAQEVATILQKAGNNAKIRGFSSNVSNYNPYSTS
AC              -NLANVAMYIDAGHAGWLGWSANLSPAAQLFATVYKNASAPASLRGLATNVANYNAWSIS
PP              -NLANVAMYIDAGHAGWLGWSANLSPAAELFATVYKNASAPAALRGLATNVANYNAWSIS
P07987          -NLPNVAMYLDAGHAGWLGWPANQDPAAQLFANVYKNASSPRALRGLATNVANYNGWNIT
P46236          -NLPNVSMYLDAGHGGWLGWPANIGPAAKLYAQIYKDAGKPSRVRGLVTNVSNYNGWKLS
HI_CEL6A        -DLPHVAMYMDAGHAGWLGWPANIQPAAELFAKIYEDAGKPRAVRGLATNVANYNAWSVS
E11341          -DLPHVAMYMDAGHAGWLGTPANIQPAAELFAKIYEDAGKPRAVRGLATNVANYNAWSIS
P49075          -NAVGVTMYIDAGHAGWLGWPANLSPAAQLFAQIYRDAGSPRNLRGIATNVANFNALRAS
Q02321          -AKVGVYMYMDAGHAGWLGWPANLSPAAQLFTQVWQNAGKSPFIKGLATNVANYNALQAA
P78721          GTQKNVRVYLDAAHGGWLN--SSADRTAEVIAEILRNAGN-GKIRGISTNVSNY------
P78720          GTQSHVKVYLDAAHGAWLN--QYADQTANVIKEILNNAGS-GKLRGISTNVSNYQS-IES
Q12646          GSMSNVSVYLDAAHGAWLG--SSTDKVASVVKEILNNAPN-GKIRGLSTNISNYQS--IS
                     : :*:*..:..**.       .*.    : ..*     ::*: :*::*:
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FIGURE 1A

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!SS_HI_CEL6B    .............HHHHHHHHHHHHH.....-.SSSSS...SS.......-.-.......
HI_CEL6B        NPPPYTSGSPSPDESRYATNIANAMRQRGLP-TQFIIDQSRVALSGARSE-W-GQWCNVN
AC              SPPSYTSGDSNYDEKLYINALSPLLTSNGWPNAHFIMDTSRNGVQPTKQQAW-GDWCNVI
PP              SPPSYTSGDSNYDEQLYINALSPLLTSNGWPNAHFIMDTSRNGVQPTKQQAW-GDWCNVI
P07987          SPPSYTQGNAVYNEKLYIHAIGPLLANHGWSNAFFITDQGRSGKQPTGQQQW-GDWCNVI
P46236          TKPDYTESNPNYDEQRYINAFAPLLAQEGWSNVKFIVDQGRSGKQPTGQKAQ-GDWCNAK
HI_CEL6A        SPPPYTSPNPNYDEKHYIEAFRPLLEARGFP-AQFIVDQGRSGKQPTGQKEW-GHWCNAI
E11341          SPPPYTSPNPNYDEKHYIEAFRPLLEARGFP-AQFIVDQGRSGKQPTGQKEW-GHTCNAI
P49075          SPDPITQGNSNYDEIHYIEALAPMLSNAGFP-AHFIVDQGRSGVQNIRDQ-W-GDWCNVK
Q02321          SPDPITQGNPNYDEIHYINALAPLLQQAGWD-ATFIVDQGRSGVQNIRQQ-W-GDWCNIK
P78721          -QPVYS-------EYQYHQNLNRALESRGVRGMKFIVDTSRNGRNPSSAT-----WCNLK
P78720          -------------EYKYHQNLNRALESKGVRGLKFIVDTSRNGANVEGAFNASGTWCNFK
Q12646          S------------EYQYHQKLASALAAVGVPNMHFIVDTGRNGVTINSGT-----WCNLV
                             *  *   :   :   *     ** * .* .             **

!SS_HI_CEL6B    .SS.........---....SSSSS..........----------.....----.....
HI_CEL6B        PAGFGQPFTTNT---NNPNVDAIVWVKPGGESDGQ----------CGMGG----APAAG
AC              GTGFGVQPTTNT---GDPLEDAFVWVKPGGESDGTSNSSATRYDFHCGYSDALQPAPEAG
PP              GTGFGVQPTTNT---GDPLEDAFVWVKPGGESDGTSNSSATRYDYHCGYSDALQPAPEAG
P07987          GTGFGIRPSANT---GDSLLDSFVWVKPGGECDGTSDSSAPRFDSHCALPDALQPAPQAG
P46236          GTGFGLRPSTNT---GDALADAFVWVKPGGESDGTSDTSAARYDYHCGLDDALKPAPEAG
HI_CEL6A        GTGFGMRPTANT---GHQYVDAFVWVKPGGECDGTSDTTAARYDYHCGLEDALKPAPEAG
E11341          GTGFGMRPTANT---GHQYVDAFVWVKPGGECDGTSDTTAARYDYHCGLEDALKPAPEAG
P49075          GAGFGQRPTTNT---GSSLIDAIVWVKPGGECDGTSDNSSPRFDSHCSLSDAHQPAPEAG
Q02321          GAGFGTRPTTNT---GSQFIDSIVWVKPGGECDGTSNSSSPRYDSTCSLPDAAQPAPEAG
P78721          GAGLGARPQANPDP-NMPLLDAYVWIKTPGESDSASS--A---DPVCRNSDSLQGAPAAG
P78720          GAGLGQRPKGNPNPGSMPLLDAYMWIKTPGEADGSSQ--GSRADPVCARGDSLQGAPDAG
Q12646          GTGLGERPRGNPN-AGMPLLDAYMWLKTPGESDGSSS--GSRADPNCSSNDSLRGAPDAG
                 :*:*     *.   .    *: :*:*. **.*.           *   .    ** **

!SS_HI_CEL6B    ...HHHHHHHHH.......
HI_CEL6B        MWFDAYAQMLTQNAHDEIA
AC              TWFQAYFVQLLTNANPALV
PP              TWFQAYFVQLLTNANPALV
P07987          AWFQAYFVQLLTNANPSFL
P46236          TWFQAYFEQLLDNANPSFL
HI_CEL6A        QWFNEYFIQLLRNANPPF-
E11341          QWFQAYFEQLLRNANPPF-
P49075          TWFQAYFETLVANANPAL-
Q02321          TWFQAYFQTLVSAANPPL-
P78721          SWFHDYFVMLLENANPPF-
P78720          SWFHEYFTMLIQNANPPF-
Q12646          QWFHDYFAQLVRNARPSF-
                 **. *   *   *.  :
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FIGURE 1B

```
   1 GGATCCAAGA TGGCCAAGTT TTTCCTTACT GCTGCCTTTG CGGCTGCCGC TCTCGCCGCT
  61 CCCGTTGTTG AGGAGCGCCA GAACTGTGCC TCGACTTGGG GCCAGTGCGG TGGCATCGGC
 121 TTCAATGGCC CGACTTGCTG CCAGTCTGGT AGCACTTGCG TGAAGCAGAA CGACTGGTAC
 181 TCCCAGTGCC TGCCTGGCAG CCAGGTGACG ACGTCGACCA CCTCGAGCTC GTCGACGACG
 241 TCTCGCGCCA CCTCCACCAC CAGCGCTGGT GGCGTGACCT CGATCACCAC TGCTCCCACC
 301 CGCACCGTCA CCATCCCCGG CGGTGCCTCG ACCACTGCCA GCTACAACGG CAACCCCTTC
 361 GAGGGTGTTC AGCTTTGGGC CAACAACTAC TACCGGTCCG AAGTTCACAC TCTTGCCATC
 421 CCTCAGATCA CTGACCCTGC CCTGAGGGCT GCGGCCTCTG CTGTTGCCGA GGTTCCCAGC
 481 TTCCAGTGGC TCGACCGGAA CGTCACCGTC GACACCCTGC TCGTCCAGAC CCTCTCTGAG
 541 ATCCGCGAGG CGAACCAAGC GGGCGCGAAT CCCCAATATG CTGCCCAAAT CGTCGTTTAC
 601 GACTTGCCTG ACCGCGACTG CGCTGCCGCG GCTTCGAACG GCGAGTGGGC CATCGCCAAC
 661 AACGGCGTCA ACAACTACAA GGCATACATC AACCGCATCC GCGAGATTCT CATTTCCTTC
 721 TCGGATGTCC GCACCATTCT GGTCATTGAG CCCGACTCGC TGGCCAACAT GGTCACCAAC
 781 ATGAACGTTC CCAAGTGCAG CGGTGCCGCC TCGACCTACC GCGAGTTGAC CATCTATGCC
 841 CTCAAGCAGC TCGACCTCCC GCACGTCGCC ATGTACATGG ACGCCGGCCA CGCTGGCTGG
 901 CTTGGCTGGC CCGCCAACAT CCAGCCCGCC GCTGAGCTCT TCGCCAAGAT CTACGAGGAT
 961 GCCGGCAAGC CCCGCGCCGT CCGCGGTCTC GCCACCAACG TCGCCAACTA CAACGCCTGG
1021 AGCGTCTCGA GCCCGCCGCC CTACACCAGC CCCAACCCCA ACTACGACGA GAAGCACTAC
1081 ATCGAGGCCT TCCGCCCCCT CCTCGAGGCC CGCGGCTTCC CCGCCCAGTT CATCGTCGAC
1141 CAGGGCCGCA GCGGCAAGCA GCCCACCGGC CAGAAGGAAT GGGGCCACTG GTGTAATGCT
1201 ATCGGTACGG GCTTCGGTAT GCGCCCTACT GCCAACACCG GCCACCAGTA CGTCGATGCC
1261 TTCGTCTGGG TCAAGCCCGG CGGTGAGTGC GACGGCACCA GCGACACGAC CGCTGCCCGC
1321 TACGACTACC ACTGCGGTCT CGAGGACGCC CTCAAGCCCG CCCCTGAAGC TGGTCAGTGG
1381 TTTAATGAAT ATTTTATTCA GTTGCTGCGT AACGCCAACC CGCCGTTCTA GTCTAGA
```

FIGURE 2

```
   1 GGATCCACTA GTAACGGCCG CCAGTGTGCT CTAAAGCCTA GGTCGCCCAC CATGCGCGTT
  61 TCTCTTGCTC TCCTCGCCTA CCTGCTCAGC GCCGCCGGCG CCTCGCCCGT CCCGGAGCTC
 121 GAGCCCCGGC AGTCCGGCAA CCCCTTCTCC GGCCGCACCC TGCTGGTCAA CTCGGACTAT
 181 AGCAGCAAGC TCGACCAGAC GCGCCAGGCC TTCCTGTCCC GCGGCGACCA GACCAACGCT
 241 GCCAAGGTCA AGTACGTCCA GGAGAAGGTT GGCACCTTCT ATTGGATCTC CAACATCTTC
 301 CTCCTGCGCG ACATCGACGT TGCCATCCAG AATGCGCGCG CCGCCAAGGC CCGCGGCGAG
 361 AACCCCATCG TCGGTCTCGT CCTGTACAAC CTCCCCGACC GCGACTGCAG CGCCGGCGAG
 421 TCCTCTGGCG AGCTTAAGCT CTCCCAGAAC GGCCTGAACC GGTACAAGAA CGAGTACGTC
 481 AACCCGTTCG CCCAGAAGCT CAAGGCCGCG TCCGACGTGC AGTTCGCCGT CATCCTCGAG
 541 CCCGATGCCA TCGGCAACAT GGTCACGGGC ACCAGCGCCT TCTGCCGCAA CGCCCGCGGC
 601 CCTCAGCAGG AGGCCATCGG CTATGCTATC TCTCAGCTCC AGGCCAGCCA CATCCACCTC
 661 TACCTGGATG TCGCCAACGG CGGCTGGCTC GGCTGGGCCG ATAAGCTCGA GCCAACTGCC
 721 CAGGAGGTCG CCACCATCCT CCAAAAGGCC GGTAACAACG CCAAGATCCG CGGCTTCTCC
 781 AGCAACGTCT CCAACTACAA CCCCTATTCC ACCAGCAACC CGCCGCCCTA CACCTCGGGC
 841 AGCCCGTCGC CCGACGAGTC GCGCTACGCC ACCAACATCG CCAACGCCAT GCGCCAGCGC
 901 GGCCTGCCGA CCCAGTTCAT CATCGACCAG AGCCGCGTCG CGCTCAGCGG CGCCCGCAGC
 961 GAGTGGGGCC AATGGTGCAA CGTGAACCCC GCCGGCTTCG GCCAGCCCTT CACCACCAAC
1021 ACCAACAACC CCAACGTCGA CGCCATCGTC TGGGTCAAGC CCGGCGGCGA GTCGGACGGC
1081 CAGTGCGGCA TGGGCGGCGC CCCGGCCGCC GGCATGTGGT TCGACGCGTA CGCGCAGATG
1141 CTGACGCAGA ACGCCCACGA CGAGATCGCC CGCGGCGCTG CCGGCAGTGG TGGTGGCAAC
1201 AACGGCGGCG GCAACAACCC CAACCCGACC CCGACCAACC CGACAAACCC GGGCCCGACC
1261 AGCAACCCGG GCGGCGGCAA CTGCGCCAGC AAGTGGGGCC AGTGCGGTGG TCAGGGATGG
1321 GCCGGCCCGA CCTGCTGCGA GGCTGGGTCG ACTTGCACCC GCCAGAACGA GTGGTACTCA
1381 CAGTGCCTGT AAAGAAAAAA GAGTGCGGTT GCTGTCACGG GTGTGACGTT GTATATAGCA
1441 CGTCCCGGTT AGGCTTTAGA GCACACTGGC GGCCGCTCGA GCATGCATCT AGA
```

FIGURE 3

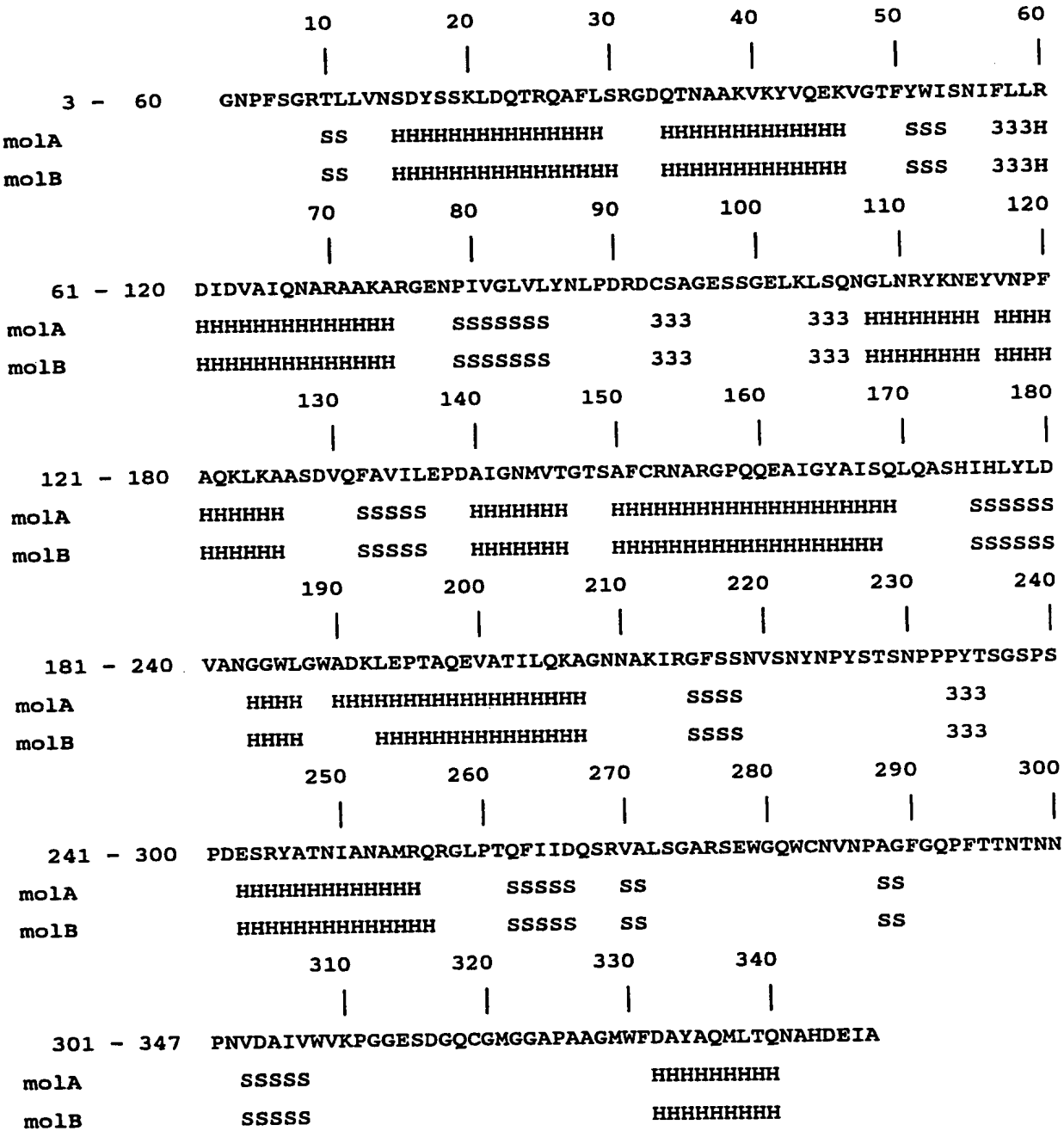
10 20 30 40 50 60
3 - 60 GNPFSGRTLLVNSDYSSKLDQTRQAFLSRGDQTNAAKVKYVQEKVGTFYWISNIFLLR
molA SS HHHHHHHHHHHHHHH HHHHHHHHHHHHH SSS 333H
molB SS HHHHHHHHHHHHHHHH HHHHHHHHHHHHH SSS 333H
70 80 90 100 110 120
61 - 120 DIDVAIQNARAAKARGENPIVGLVLYNLPDRDCSAGESSGELKLSQNGLNRYKNEYVNPF
molA HHHHHHHHHHHHHH SSSSSSS 333 333 HHHHHHHH HHHH
molB HHHHHHHHHHHHHH SSSSSSS 333 333 HHHHHHHH HHHH
130 140 150 160 170 180
121 - 180 AQKLKAASDVQFAVILEPDAIGNMVTGTSAFCRNARGPQQEAIGYAISQLQASHIHLYLD
molA HHHHHH SSSSS HHHHHHH HHHHHHHHHHHHHHHHHHH SSSSSS
molB HHHHHH SSSSS HHHHHHH HHHHHHHHHHHHHHHHHH SSSSSS
190 200 210 220 230 240
181 - 240 VANGGWLGWADKLEPTAQEVATILQKAGNNAKIRGFSSNVSNYNPYSTSNPPPYTSGSPS
molA HHHH HHHHHHHHHHHHHHHH SSSS 333
molB HHHH HHHHHHHHHHHHH SSSS 333
250 260 270 280 290 300
241 - 300 PDESRYATNIANAMRQRGLPTQFIIDQSRVALSGARSEWGQWCNVNPAGFGQPFTTNTNN
molA HHHHHHHHHHHHH SSSSS SS SS
molB HHHHHHHHHHHHHH SSSSS SS SS
310 320 330 340
301 - 347 PNVDAIVWVKPGGESDGQCGMGGAPAAGMWFDAYAQMLTQNAHDEIA
molA SSSSS HHHHHHHHH
molB SSSSS HHHHHHHHH

FIGURE 4

5

```
10        20        30        40        50        60
                    |         |         |         |         |         |
    3 -  60    GNPFSGRTLLVNSDYSSKLDQTRQAFLSRGDQTNAAKVKYVQEKVGTFYWISNIFLLR
                      SSLLLHHHHHHHHHHHHHH    HHHHHHHHHHHHH    SSSLLLLLLH

                     70        80        90       100       110       120
                    |         |         |         |         |         |
   61 - 120  DIDVAIQNARAAKARGENPIVGLVLYNLPDRDCSAGESSGELKLSQNGLNRYKNEYVNPF
             HHHHHHHHHHHHHH    SSSSSSSLLLLLLLLLLLLLLLLLLLLLHHHHHHHH HHHH

                    130       140       150       160       170       180
                    |         |         |         |         |         |
   121 - 180  AQKLKAASDVQFAVILEPDAIGNMVTGTSAFCRNARGPQQEAIGYAISQLQASHIHLYLD
             HHHHHH     SSSSSLLLHHHHHHH   HHHHHHHHHHHHHHHHHHH      SSSSSS

                    190       200       210       220       230       240
                    |         |         |         |         |         |
   181 - 240  VANGGWLGWADKLEPTAQEVATILQKAGNNAKIRGFSSNVSNYNPYSTSNPPPYTSGSPS
             LLLHHHHLLLLLHHHHHHHHHHHHHH       SSSSLLLLLLLLLLLLLLLLLLLL

                    250       260       270       280       290       300
                    |         |         |         |         |         |
   241 - 300  PDESRYATNIANAMRQRGLPTQFIIDQSRVALSGARSEWGQWCNVNPAGFGQPFTTNTNN
             LLHHHHHHHHHHHHH      SSSSS   SSLLLLLLLLLLLLLLLSS

                    310       320       330       340
                    |         |         |         |
   301 - 347  PNVDAIVWVKPGGESDGQCGMGGAPAAGMWFDAYAQMLTQNAHDEIA
               SSSSSLLLLLLLLLLLLLLLLLLLLLLLLHHHHHHHHH
```

FIGURE 5

```
90        100       110       120       130       140
          |         |         |         |         |         |
          YNGNPFEGVQLWANNYYRSEVHTLAIPQITDPALRAAASAVAEVPSFQWLDR

        150       160       170       180       190       200
          |         |         |         |         |         |
NVTVDTLLVQTLSEIREANQAGANPQYAAQIVVYDLPDRDCAAAASNGEWAIANNGVNNY

        210       220       230       240       250       260
          |         |         |         |         |         |
KAYINRIREILISFSDVRTILVIEPDSLANMVTNMNVPKCSGAASTYRELTIYALKQLDL

        270       280       290       300       310       320
          |         |         |         |         |         |
PHVAMYMDAGHAGWLGWPANIQPAAELFAKIYEDAGKPRAVRGLATNVANYNAWSVSSPP

        330       340       350       360       370       380
          |         |         |         |         |         |
PYTSPNPNYDEKHYIEAFRPLLEARGFPAQFIVDQGRSGKQPTGQKEWGHWCNAIGTGFG

        390       400       410       420       430       440
          |         |         |         |         |         |
MRPTANTGHQYVDAFVWVKPGGECDGTSDTTAARYDYHCGLEDALKPAPEAGQWFNEYFI

        450
          |
QLLRNANPPF
```

FIGURE 6

```
90        100       110       120       130       140
          |         |         |         |         |         |
          YNGNPFEGVQLWANNYYRSEVHTLAIPQITDPALRAAASAVAEVPSFQWLDR

        150       160       170       180       190       200
          |         |         |         |         |         |
NVTVDTLLVQTLSEIREANQAGANPQYAAQIVVYDLPDRDCAAAASNGEWAIANNGVNNY

        210       220       230       240       250       260
          |         |         |         |         |         |
KAYINRIREILISFSDVRTILVIEPDSLANMVTNMNVPKCSGAASTYRELTIYALKQLDL

        270       280       290       300       310       320
          |         |         |         |         |         |
PHVAMYMDAGHAGWLGWPANIQPAAELFAKIYEDAGKPRAVRGLATNVANYNAWSVSSPP

        330       340       350       360       370       380
          |         |         |         |         |         |
PYTSPNPNYDEKHYIEAFRPLLEARGFPAQFIVDQGRSGKQPTGQKEWGHWCNAIGTGFG

        390       400       410       420       430       440
          |         |         |         |         |         |
MRPTANTGHQYVDAFVWVKPGGECDGTSDTTAARYDYHCGLEDALKPAPEAGQWFNEYFI

        450
          |
QLLRNANPPF
```

FIGURE 7

```
HI_CEL6B  ......QSGN PFSGRTLLVN SDYSSKLDQT RQAFLSRGDQ TNAAKVKYVQ
  Q12646  NNGWGSGSTK NFFDNQIYAN PKFIEEVNSS IPRLSYD... ..LQQKAQKV

HI_CEL6B  EKVGTFYWIS NIFLLRDIDV AIQNARAAKA RGENPIVGLV LYN.LPDRDC
  Q12646  KNVPTAVWLA WDGATGEVAQ HLKAAGSK.. ......TVVF IMYMIPTRDC

HI_CEL6B  SAGESSGELK LSQNGLNRYK NEYVNPFAQK LKAASDVQFA VILEPDAIGN
  Q12646  NANASAG... .GAGNLNTYK .GYVDNIART IRSYPNSKVV MILEPDTLGN

HI_CEL6B  MVTGTSAFCR NARGPQQEAI GYAISQL.QA SHIHLYLDVA NGGWLGWADK
  Q12646  LVTANSANCQ NVRNLHKNAL SYGVNVFGSM SNVSVYLDAA HGAWLG..SS

HI_CEL6B  LEPTAQEVAT ILQKAGNNAK IRGFSSNVSN YNPYSTSNPP PYTSGSPSPD
  Q12646  TDKVASVVKE ILNNAPN.GK IRGLSTNISN YQS..ISS.. ..........

HI_CEL6B  ESRYATNIAN AMRQRGLP.T QFIIDQSRVA LSGARSEWGQ WCNVNPAGFG
  Q12646  EYQYHQKLAS ALAAVGVPNM HFIVDTGRNG VTINSGT... WCNLVGTGLG

HI_CEL6B  QPFTTNT..N NPNVDAIVWV KPGGESDGQ. ........CG MGG....APA
  Q12646  ERPRGNPNAG MPLLDAYMWL KTPGESDGSS SGSRADPNCS SNDSLRGAPD

HI_CEL6B  AGMWFDAYAQ MLTQNAHDEI
  Q12646  AGQWFHDYFA QLVRNARPSF
```

FIGURE 8

```
HI_CEL6B  QSGNPFSGRT LLVNSDYSSK LDQTRQAFLS RGDQTNAAKV KYVQEKVGTF
  P78720  PSSDNFFENE IYSNYKFQGE VDISIKKLNG D.....LKAK AEKVKYVPTA

HI_CEL6B  YWISNIFLLR DIDVAIQNAR AAKARGENPI VGLVLYN.LP DRDCSAGESS
  P78720  VWLAWDGAPQ EVPRYLQEAG NK........ TVVFVLYMIP TRDCGANASA

HI_CEL6B  GELKLSQNGL NRYKNEYVNP FAQKLKAASD VQFAVILEPD AIGNMVTGTS
  P78720  G....GSATI DKYK.GYINN IYNTSNQYKN SKIVMILEPD TIGNLVTNNN

HI_CEL6B  AFCRNARGPQ QEAIGYAISQ L.QASHIHLY LDVANGGWLG WADKLEPTAQ
  P78720  DNCRNVRNMH KQALSYAISK FGTQSHVKVY LDAAHGAWLN ..QYADQTAN

HI_CEL6B  EVATILQKAG NNAKIRGFSS NVSNYNPYST SNPPPYTSGS PSPDESRYAT
  P78720  VIKEILNNAG S.GKLRGIST NVSNYQS.IE S......... ....EYKYHQ

HI_CEL6B  NIANAMRQRG LP.TQFIIDQ SRVALSGARS E.W.GQWCNV NPAGFGQPFT
  P78720  NLNRALESKG VRGLKFIVDT SRNGANVEGA FNASGTWCNF KGAGLGQRPK

HI_CEL6B  TNT...NNPN VDAIVWVKPG GESDGQ.... .....CGMGG ....APAAGM
  P78720  GNPNPGSMPL LDAYMWIKTP GEADGSSQGS RADPVCARGD SLQGAPDAGS

HI_CEL6B  WFDAYAQMLT QNAHDEI
  P78720  WFHEYFTMLI QNANPPF
```

FIGURE 9

```
HI_CEL6B  QSGNPFSGRT LLVNSDYSSK LDQTRQAFLS RGDQTNAAKV KYVQEKVGTF
  P78721  PTSDNFFENE LYSNYKFQGE VDQSIQRLSG S.....LQEK AKKVKYVPTA

HI_CEL6B  YWISNIFLLR DIDVAIQNAR AAKARGENPI VGLVLYN.LP DRDCSAGESS
  P78721  AWLAWSGATN EVARYLNEAG SK........ TVVFVLYMIP TRDCNAGGSN

HI_CEL6B  GELKLSQNGL NRYKNEYVNP FAQKLKAASD VQFAVILEPD AIGNMVTGTS
  P78721  G....GADNL STYQ.GYVNS IYNTINQYPN SRIVMIIEPD TIGNLVTANN

HI_CEL6B  AFCRNARGPQ QEAIGYAISQ L.QASHIHLY LDVANGGWLG WADKLEPTAQ
  P78721  ANCRNVHDMH KQALSYAISK FGTQKNVRVY LDAAHGGWLN ..SSADRTAE

HI_CEL6B  EVATILQKAG NNAKIRGFSS NVSNYNPYST SNPPPYTSGS PSPDESRYAT
  P78721  VIAEILRNAG N.GKIRGIST NVSNY..... ..QPVYS... ....EYQYHQ

HI_CEL6B  NIANAMRQRG LP.TQFIIDQ SRVALSGARS EWGQWCNVNP AGFGQPFTTN
  P78721  NLNRALESRG VRGMKFIVDT SRNGRNPSSA T...WCNLKG AGLGARPQAN

HI_CEL6B  T..NNPNVDA IVWVKPGGES DGQ......C GMGG....AP AAGMWFDAYA
  P78721  PDPNMPLLDA YVWIKTPGES DSASSADPVC RNSDSLQGAP AAGSWFHDYF

HI_CEL6B  QMLTQNAHDE I
  P78721  VMLLENANPP F
```

FIGURE 10

INTERNATIONAL SEARCH REPORT

International application No.
PCT/DK 98/00299

A. CLASSIFICATION OF SUBJECT MATTER

IPC6: C12N 9/42, C11D 3/386
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC6: C12N, C11D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, CA, BIOSIS, MEDLINE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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X	WO 9407998 A1 (NOVO NORDISK A/S), 14 April 1994 (14.04.94), page 2, line 12 - line 22, abstract --	23-39
X	WO 9524471 A1 (NOVO NORDISK A/S), 14 Sept 1995 (14.09.95), abstract --	23-39
X	WO 9502042 A1 (BIOMOLECULAR RESEARCH INSTITUTE LTD ET AL), 19 January 1995 (19.01.95), abstract --	23-39

[X] Further documents are listed in the continuation of Box C. [X] See patent family annex.

* Special categories of cited documents:
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"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combinatio, being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
18 November 1998	01 -12- 1998
Name and mailing address of the ISA/ Sw dish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86	Authorized officer Yvonne Siösteen Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

International application No.
PCT/DK 98/00299

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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A	WO 8909259 A1 (NOVO INDUSTRI A/S), 5 October 1989 (05.10.89), page 1, line 5 - line 29, claim 11	1-22
A	WO 9720025 A1 (UNILEVER N.V. ET AL), 5 June 1997 (05.06.97), page 3, line 1, claim 2	1-22
A	Dialog Information Service, File 155, Medline, Dialog accession No. 08665148, Medline accession No. 96236181, Denamn S. et al: "Charactreization of a Neocallimastrix patriciarum cellulasa cDNA (ce1A) homologous to Trichoderma reesei cellobio-hydrolase II", Appl Environ Microbiol (UNITED STATES) Jun 1996, 62 (6) p1889-96	17,18
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A	WO 9623874 A1 (NOVO NORDISK A/S), 8 August 1996 (08.08.96), abstract	23.39
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Information on patent family members

03/11/98

International application No.
PCT/DK 98/00299

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